Subsurface Investigation Report of Findings

PALCO Company Garage
Scotia, California
Case No. 12272

Prepared for:

PALCO

SHN Consulting Engineers & Geologists, Inc.

812 W. Wabash
Eureka, CA 95501-2138
707/441-8855

April 2006
089097.120

CONSULTING ENGINEERS & GEOLOGISTS, INC.
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Reference: 089097.120

April 14, 2006

Mr. Mark Verhey
Humboldt County Division of Environmental Health
100 H Street, Suite 100
Eureka, CA 95501

Subject: **Subsurface Investigation Report of Findings PALCO Company Garage, Scotia, California; Case No. 12272**

Dear Mr. Verhey:

This report is presented by SHN Consulting Engineers & Geologists, Inc. (SHN) on behalf and with the approval of PALCO. Included in the report are the results of the subsurface investigation at the PALCO Company Garage Underground Storage Tank site, performed in March 2006, in compliance with the SHN February 22, 2006 letter schedule of PALCO proposed work tasks provided to your office.
Please don't hesitate to contact me if you have any questions.

Sincerely,

SHN Consulting Engineers & Geologists, Inc.

Martin E. Lay, P.E.
Project Manager

MEL/RMR:lms
Enclosure: Report
copy w/encl: Robert Vogt, PALCO
Kasey Ashley, RWQCB, North Coast Region

Reference: 089097.120

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Case No. 12272

Prepared for:

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Prepared by:

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812 W. Wabash
Eureka, CA 95501-2138
707/441-8855

April 2006

QA/QC: MEL___

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Abbreviations and Acronyms

<	denotes a value that is "less than" the method detection limit.
ug/g	micrograms per gram
ug/L	micrograms per Liter
ASTM	American Society for Testing and Materials
B-#	Boring-number/well point-number
BGS	Below Ground Surface
BTEX	Benzene, Toluene, Ethylbenzene, and total Xylenes
EPA	United States Environmental Protection Agency
HCDEH	Humboldt County Division of Environmental Health
MTBE	Methyl Tertiary-Butyl Ether
MW-#	Monitoring Well-#
NGVD29	National Geodetic Vertical Datum 1929
PVC	Polyvinyl Chloride
RAP	Remedial Action Plan
RAWP	Remedial Action Work Plan
ROWD	Report of Waste Discharge
RWQCB	California Regional Water Quality Control Board, North Coast Region
SHN	SHN Consulting Engineers & Geologists, Inc.
TPHD	Total Petroleum Hydrocarbons as Diesel
TPHG	Total Petroleum Hydrocarbons as Gasoline
TPHMO	Total Petroleum Hydrocarbons as Motor Oil
UST	Underground Storage Tank

1.0 Introduction

SHN Consulting Engineers & Geologists, Inc. (SHN) was retained by PALCO to conduct an additional subsurface investigation at the PALCO Company Garage in Scotia, California. This report describes the field activities for the soil and groundwater sampling at the site. This work was requested by the Humboldt County Division of Environmental Health (HCDEH). This report is the culmination of the work described and agreed upon by representatives of PALCO, SHN, and the HCDEH.

The information in this report is presented in 5 sections. This section serves as an introduction and describes the site history and conditions, and discusses the objectives of the investigation. Section 2.0 describes the field program for the monitoring well sampling. Section 3.0 presents the results of the groundwater monitoring, and Section 4.0 presents a discussion of the findings and provides recommendations. Section 5.0 lists cited references.

1.1 Vicinity Information

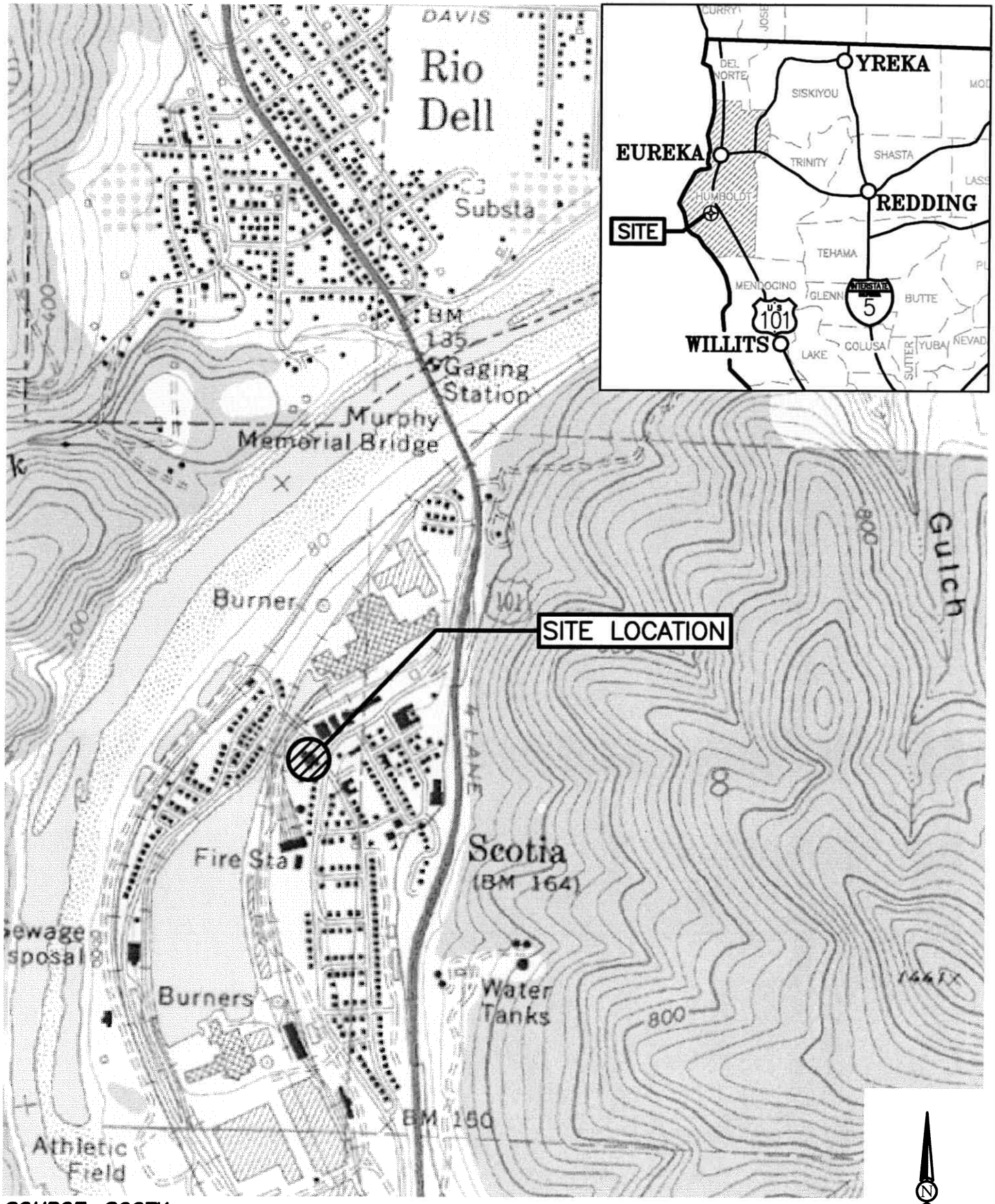
The PALCO Company Garage site is located at the northeastern corner of the intersection of Main and Bridge Streets, in the town of Scotia, Humboldt County, California (Assessor's Parcel Number 205-351-16). The Company Garage (Case No. 12272) and former Service Station (Ademar's Chevron, Case No. 12273) are part of the same facility. The entire site lies within the northeast ¼ of Section 7, Township 1 North, Range 1 East, Humboldt Base and Meridian (Figure 1).

1.2 Site History

The existing Company Garage building was historically used for vehicle and equipment service and repair. Five Underground Storage Tanks (USTs) were formerly located at the facility (Figure 2). A 12,000-gallon unleaded gasoline UST was installed in 1974; a 1,500-gallon diesel UST, and a 1,000-gallon leaded gasoline UST were installed in 1959; a 1,000-gallon premium unleaded gasoline UST was installed in 1972; and, a 1,000-gallon unleaded gasoline UST was installed at the facility in 1975.

On June 6, 1991, the 1,000-gallon leaded gasoline UST was removed under permit from the southeast corner of the Company Garage site. On July 27, 1998, SHN and the HCDEH observed the removal of the remaining USTs. Minimal over-excavation of soil was completed in the northernmost tank pit, which previously contained the 12,000-gallon UST . Over-excavation of contaminated soil from around the southern-most tank pits was also conducted. The tank pit locations were subsequently backfilled, and the surface was paved with asphalt concrete as directed by PALCO. Approximately 120 cubic yards of excavated soil were temporarily stockpiled on site, under permit, and in November 1999, were transported under manifest to Ben's Truck and Equipment Incorporated, located in Red Bluff, California, for disposal by bioremediation.

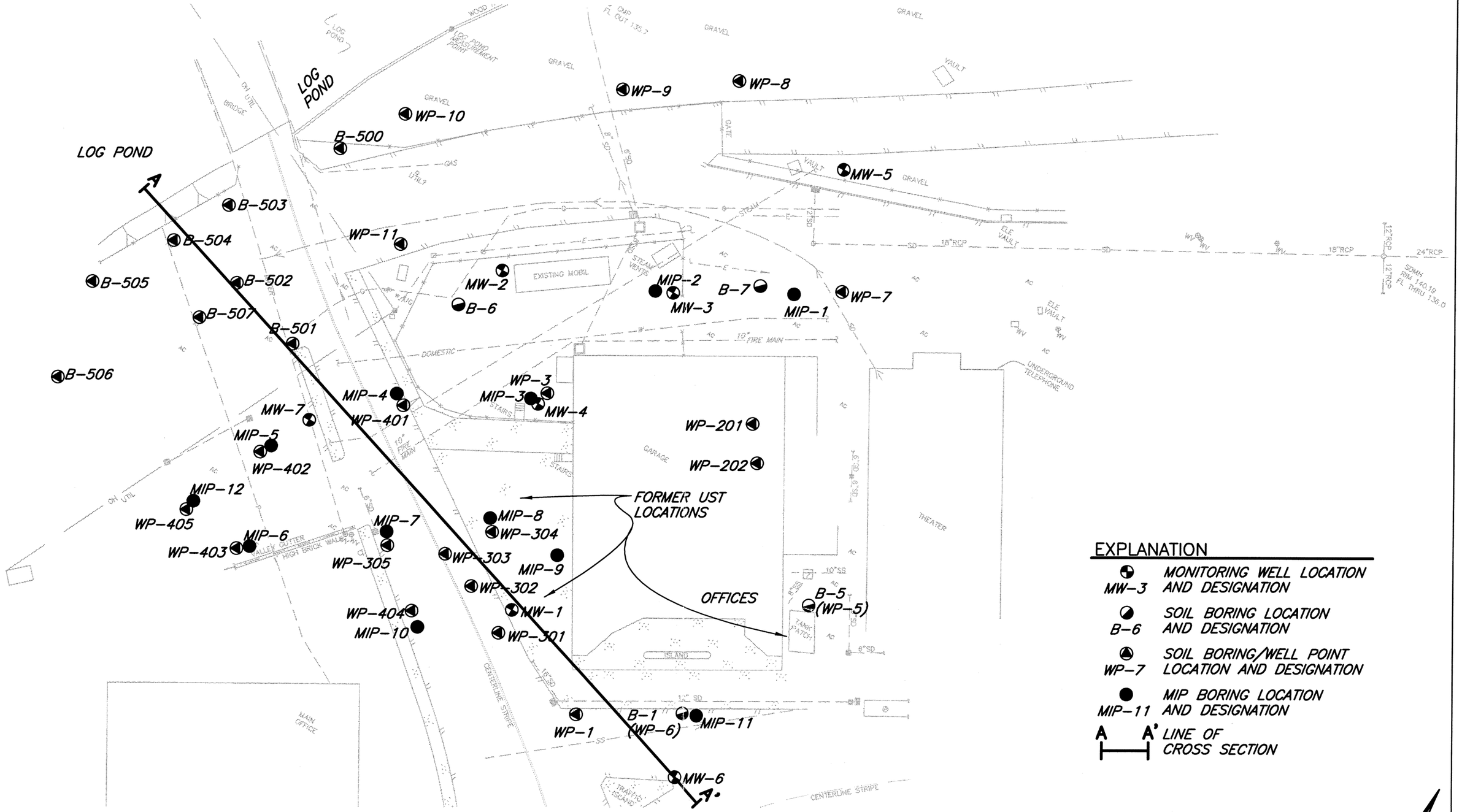
SHN conducted an initial subsurface soil and groundwater investigation at the Company Garage site in December 1999, which included the advancement of 12 exploratory borings (including 6 temporary well points using direct push methodology), and the installation of three, 2-inch monitoring wells (MW-1, MW-2, and MW-3). Soil and groundwater samples were collected, and analyzed, and the results of the investigation were reported in our December 1999 Subsurface Investigation Report of Findings (SHN, 2000).



SOURCE: SCOTIA USGS 7.5 MINUTE QUADRANGLE

1"=1000'±

SHN Consulting Engineers & Geologists, Inc.	PALCO Company Garage LOP#12272 Scotia, California		Site Location Map SHN 089097.120
	MAY 2005	089097.120-LOCATION	Figure 1



EXPLANATION

- MW-3 — MONITORING WELL LOCATION AND DESIGNATION
- B-6 — SOIL BORING LOCATION AND DESIGNATION
- WP-7 — SOIL BORING/WELL POINT LOCATION AND DESIGNATION
- MIP-11 — MIP BORING LOCATION AND DESIGNATION
- A — A' — LINE OF CROSS SECTION

1"=40'

Consulting Engineers & Geologists, Inc.	PALCO Company Garage LOP #12272 Scotia, California		Site Plan SHN 089097.120
	February 2006	089097.120-SITEPLAN-2006	Figure 2

The HCDEH responded, by letter dated March 23, 2000, to SHN's December 1999 report of findings. One item requested by the HCDEH was that PALCO submit a work plan to further delineate and characterize the extent of soil and groundwater contamination at the site. SHN, on behalf of PALCO, submitted the requested work plan to the HCDEH on June 12, 2000. PALCO received formal written comments relative to the work plan from the HCDEH in a letter dated August 10, 2000.

PALCO, in conformance with the modified June 12, 2000, work plan and under permit from the HCDEH, authorized SHN to complete the additional subsurface investigation and the installation of a new groundwater-monitoring well (MW-4), which occurred on November 8 and 9, 2000. Soil and groundwater samples were collected, analyzed, and the results were reported in our November 2000 Site Investigation Report of Findings (SHN, January 2001).

On May 3, 2001, representatives from PALCO, HCDEH, and SHN met to discuss the findings of the November 2000 subsurface investigation, clarify outstanding contaminant fate issues that were previously raised by HCDEH, and formulate a course of action for ongoing site investigation and monitoring. SHN submitted a meeting memorandum of understanding dated May 9, 2001, which was acknowledged by the HCDEH in their May 15, 2001, letter. The consensus that was reached at the meeting was to continue monitoring the existing wells for an additional dry and wet season, and, using the data collected, determine conditions for site closure or further investigation.

PALCO and HCDEH representatives attended an additional meeting with SHN on March 7, 2002, for the purpose of discussing the year 2001 monitoring data and requirements, and alternatives for expediting site closure. The meeting minutes were submitted by SHN in an April 3, 2002 letter to the HCDEH. On April 29, 2002, SHN submitted a letter to the HCDEH, addressing the five tasks that were outlined in our April 3, 2002 letter.

By letter dated October 24, 2002, the Regional Water Quality Control Board (RWQCB) concurred with SHN's September 25, 2002 request to reduce the monitoring well sampling frequency and reporting to annual in March.

On March 6, 2003, PALCO submitted a Remedial Action Feasibility Study to the HCDEH for their review and comment. HCDEH concurred, by letter dated April 14, 2003, with the feasibility proposal of using hydrogen peroxide for the remedial action, and requested a Remedial Action Plan (RAP).

On June 9, 2003, PALCO submitted the RAP. HCDEH conditionally concurred with the RAP by letter dated July 16, 2003, requested clarifications, and authorized the proposed pilot study.

RAP clarification items were submitted by PALCO to HCDEH on September 5, 2003. HCDEH commented on clarification items by letter dated October 9, 2003.

PALCO responded to HCDEH comments by letter dated November 13, 2003. On December 24, 2003, PALCO submitted to HCDEH the project Remedial Action Work Plan (RAWP).

On January 8, 2004, PALCO submitted the application and documents for the project Report of Waste Discharge (ROWD) to the RWQCB.

HCDEH commented on the RAWP by letter dated February 17, 2004. On February 24, 2004, the RWQCB commented by letter to the ROWD. PALCO responded to the RWQCB with Addendum No. 1, dated April 14, 2004, to the ROWD.

On September 23 and 24, 2004, SHN supervised Fisch Environmental of Valley Springs, California in the installation of 12 membrane interface probe borings and five soil borings/temporary well points. Results were presented in the Report of Findings for Additional Site Investigation (SHN, December 2004).

On March 4, 2005, SHN supervised Fisch Environmental in the advancement of one soil boring and subsequent groundwater monitoring well installation (MW-7) at the Company Garage site (SHN, May 2005).

1.3 Geology and Hydrology

The PALCO Company Garage site is located on the south limb of the Eel River syncline on a fluvial terrace, approximately 1,000 feet southeast of the Eel River. Sedimentary deposits underlying the site consist of late Quaternary age alluvium deposited by the Eel River. According to the subsurface exploration logs for the piezometers and borings installed at the site, these deposits consist of medium-stiff to stiff clayey silt, which was moist to very moist and gray to yellowish brown in color.

Depth to groundwater ranges between 3 and 6 feet below grade at the project site. Additionally, a log pond, with a varying water surface elevation of approximately 132 feet (National Geodetic Vertical Datum [NGVD] 1929), is located approximately 100 feet northwest of the site. This log pond is presently assumed to act as a hydraulic barrier to groundwater movement from the source area toward downgradient receptors.

1.4 Objective and Scope of Work

The objective of the investigation was to collect data requested by the HCDEH at the February 6, 2006, meeting with PALCO at SHN, to further assess current site conditions.

The scope of work included the following items:

- Install 8 soil borings and collect one soil sample from each boring
- Install a temporary well point in each boring and collect a groundwater sample from each well point.
- Collect groundwater elevation data from all site wells, the log pond, and the temporary well points.
- Survey the well points for elevation.
- Prepare this report of findings.

2.0 Field Activities

2.1 Soil and Groundwater Sampling

On March 9, 2006, SHN supervised Fisch Drilling in the collection of soil and groundwater samples. Sample locations are shown on Figure 2. Soil samples were collected using the Geoprobe® Macro Core sampling system from eight borings (B-500 through B-507). One soil sample was collected from each boring for chemical analysis. Four soil samples were collected for grain size analysis. Borings were extended to a maximum of 14 feet Below Ground Surface (BGS). Samples were continuously collected in 4-foot sections. Following retrieval of the sampler, the plastic tube was removed from the sampler, and the selected sample aliquot was cut from the desired depth and sealed on both ends with Teflon® tape and plastic caps. Soils in the remaining sample tubes were used for soil descriptions. Each soil sample was labeled with the project name, project number, sample number, sample depth, sample time and date. All samples were placed in Ziploc® bags and stored in an iced cooler. Each soil sample was analyzed for constituents described in the "Laboratory Analysis" section. Sample handling, transport, and delivery to the laboratory were documented using chain-of-custody procedures.

For temporary well point construction, ten feet of ¾-inch diameter 0.010-inch slot Polyvinyl Chloride (PVC) screen and 5 feet of ¾-inch diameter PVC blank were inserted into the open boreholes. A small amount of #2/12 Monterey sand was installed around the screened interval of each well point, and bentonite chips were installed as a surface seal. The well points were constructed with screened intervals similar to site monitoring wells. At B-506 and B-507, gravel collapsing into the borehole prevented the installation of a PVC well point, so groundwater samples were collected using the Geoprobe® well point screen sampler. Groundwater was collected from each well point using new polyethylene tubing with a bottom mounted check valve and placed in laboratory-supplied containers. Each groundwater sample container was labeled with the project name, project number, sample number, sample time, and date and placed in an iced cooler. Each groundwater sample was analyzed for constituents described in the "Laboratory Analysis" section. Sample handling, transport, and delivery to the laboratory were documented using chain-of-custody procedures.

The PVC well points were allowed to sit overnight. On March 10, 2006, SHN collected depth to water measurements from the top of the temporary casing using an electrical conductivity sensor. Depth-to-water measurements were also taken from all site-monitoring wells. Prior to removing the temporary well points, the relative elevation of the top of casing were surveyed and tied into the elevation of MW-7 and the log pond measuring point.

On March 10, 2006, boreholes were backfilled with bentonite and capped at the surface to match the existing surface.

Field notes are included in Appendix A. Soil boring logs are included in Appendix B.

2.2 Laboratory Analysis

Each soil sample was analyzed for:

- Total Petroleum Hydrocarbons as Motor Oil (TPHMO), as Diesel (TPHD), and as Gasoline (TPHG) in general accordance with U.S. Environmental Protection Agency (EPA) Method No. 8015B.
- Benzene, Toluene, Ethylbenzene, and total Xylenes (BTEX), and Methyl Tertiary-Butyl Ether (MTBE) in general accordance with EPA Method No. 8021B.

Each groundwater sample was analyzed for:

- TPHMO, TPHD, and TPHG in general accordance with EPA Method No. 8015B.
- BTEX, and MTBE in general accordance with EPA Method No. 8021B

Silica gel cleanup was not performed on any samples for analysis.

North Coast Laboratories of Arcata, California, performed the analyses.
Four soil samples were submitted to SHN's material testing laboratory for grain size analysis in accordance with American Society for Testing and Materials (ASTM) D422.

2.3 Equipment Decontamination Procedures

All drilling and sampling equipment was cleaned prior to bringing it on site. All small equipment that required on-site cleaning was cleaned using the triple wash system. The equipment was first washed in a water solution containing Liquinox® cleaner, followed by a distilled water rinse, then by a second distilled water rinse.

2.4 Investigation-Derived Waste Management

All water produced during the well purging and sampling activities was temporarily stored on site in 5-gallon plastic buckets. The water was then placed into the wastewater collection system for treatment at the Scotia wastewater treatment plant. SHN documented the time, date, and quantity of water disposed. SHN discharged approximately 5 gallons of water into the Scotia wastewater collection system.

3.0 Groundwater Monitoring Results

3.1 Soil Analytical Results

Eight soil samples were submitted for laboratory analysis. No constituents of concern were detected in soil above the method detection limits (Table 1). The laboratory analytical report is included in Appendix C.

Table 1
Soil Analytical Results, March 9, 2006
PALCO Company Garage, Scotia, California
(in ug/g)[1]

Sample Location and Depth (in feet)	TPHMO[2]	TPHD[2]	TPHG[2]	B[3]	T[3]	E[3]	X[3]	MTBE[3]
B-500 @ 7.5′	<10[4]	<1.0	<1.0	**<0.0050**	<0.0050	<0.0050	<0.0050	**<0.050**
B-501 @ 7.5′	<10	<1.0	<1.0	**<0.0050**	<0.0050	<0.0050	<0.0050	**<0.050**
B-502 @ 6.5′	<10	<1.0	<1.0	**<0.0050**	<0.0050	<0.0050	<0.0050	**<0.050**
B-503 @ 7.5′	<10	<1.0	<1.0	**<0.0050**	<0.0050	<0.0050	<0.0050	**<0.050**
B-504 @ 5.5′	<10	<1.0	<1.0	**<0.0050**	<0.0050	<0.0050	<0.0050	**<0.050**
B-505 @ 8′	<10	<1.0	<1.0	**<0.0050**	<0.0050	<0.0050	<0.0050	**<0.050**
B-506 @ 7.5′	<10	<1.0	<1.0	**<0.0050**	<0.0050	<0.0050	<0.0050	**<0.050**
B-507 @ 6.5′	<10	<1.0	<1.0	**<0.0050**	<0.0050	<0.0050	<0.0050	**<0.050**

1. ug/g: micrograms per gram
2. Total Petroleum Hydrocarbons as Motor Oil (TPHMO), as Diesel (TPHD), and as Gasoline (TPHG), analyzed in general accordance with EPA Method No. 8015B.
3. Benzene (B), Toluene (T), Ethylbenzene (E), Xylenes (X), and Methyl Tertiary-Butyl Ether (MTBE) analyzed in general accordance with EPA Method No. 8021B.
4. <: Denotes a value that is "less than" the method detection limit.

3.2 Groundwater Analytical Results

Groundwater analytical results are presented in Table 2 and summarized on Figure 3. TPHMO was detected in each groundwater sample. The laboratory noted that the samples did not have the peak pattern typical of fresh motor oil; however, the results reported represent the amount of material in the motor oil range. Low concentrations of TPHD were detected in the groundwater samples from well points B-503 and B-507. Samples analyzed for TPHMO and TPHD were not subjected to a silica gel cleanup. TPHG was not detected in any groundwater samples analyzed. Low concentrations of toluene were detected in the groundwater samples from well points B-502 and B-503. Low concentrations of total Xylenes were detected in the groundwater samples from well points B-502 and B-503. The laboratory analytical report is included in Appendix C.

Figure 3 depicts a summary of the March 9, 2006, groundwater analytical results.

LOG POND

LOG POND

650
53
<50

B-500

460
<50
<50

WP-10

WP-9

WP-8

VAULT

GATE

VAULT

MW-5

GRAVEL

14,000
<500
<50

B-503

B-504

480
<50
<50

WP-11

720
<50
<50

B-505

B-502

MW-2

B-6

EXISTING MOBIL

STEAM VENTS

MIP--2

MW-3

B-7

MIP-1

WP-7

ELE VAULT

B-507

460
100
<50

B-501

4,000
<500
<50

10" FIRE MAIN

DOMESTIC

UNDERGROUND TELEPHONE

B-506

690
<50
<50

MIP-4

WP-401

WP-3

MIP-3

MW-4

MW-7

MIP-5

WP-402

WP-201

WP-202

GARAGE

STAIRS

MIP-12

WP-405

MIP-6

WP-403

MIP-7

WP-305

FORMER UST LOCATIONS

MIP-8

WP-304

WP-303

MIP-9

WP-302

OFFICES

B-5
(WP-5)

MW-1

WP-301

WP-404

MIP-10

TANK PATCH

ISLAND

THEATER

CENTERLINE STRIPE

B-1
(WP-6)

MIP-11

WP-1

MW-6

MAIN OFFICE

TRAFFIC ISLAND

CENTERLINE STRIPE

EXPLANATION

- MW-3 — MONITORING WELL LOCATION AND DESIGNATION
- B-6 — SOIL BORING LOCATION AND DESIGNATION
- WP-7 — SOIL BORING/WELL POINT LOCATION AND DESIGNATION
- MIP-11 — MIP BORING LOCATION AND DESIGNATION

460 TPHMO
53 TPHD
<50 TPHG
IN ug/L

1"=40'

Consulting Engineers & Geologists, Inc.

PALCO Company Garage
LOP #12272
Scotia, California

Summary of Groundwater Analytical Results - March 9, 2006
SHN 089097.120

February 2006 | 089097.120-SITEPLAN-2006 | Figure 3

Table 2
Groundwater Analytical Results, March 9, 2006
PALCO Company Garage, Scotia, California
(in ug/L)[1]

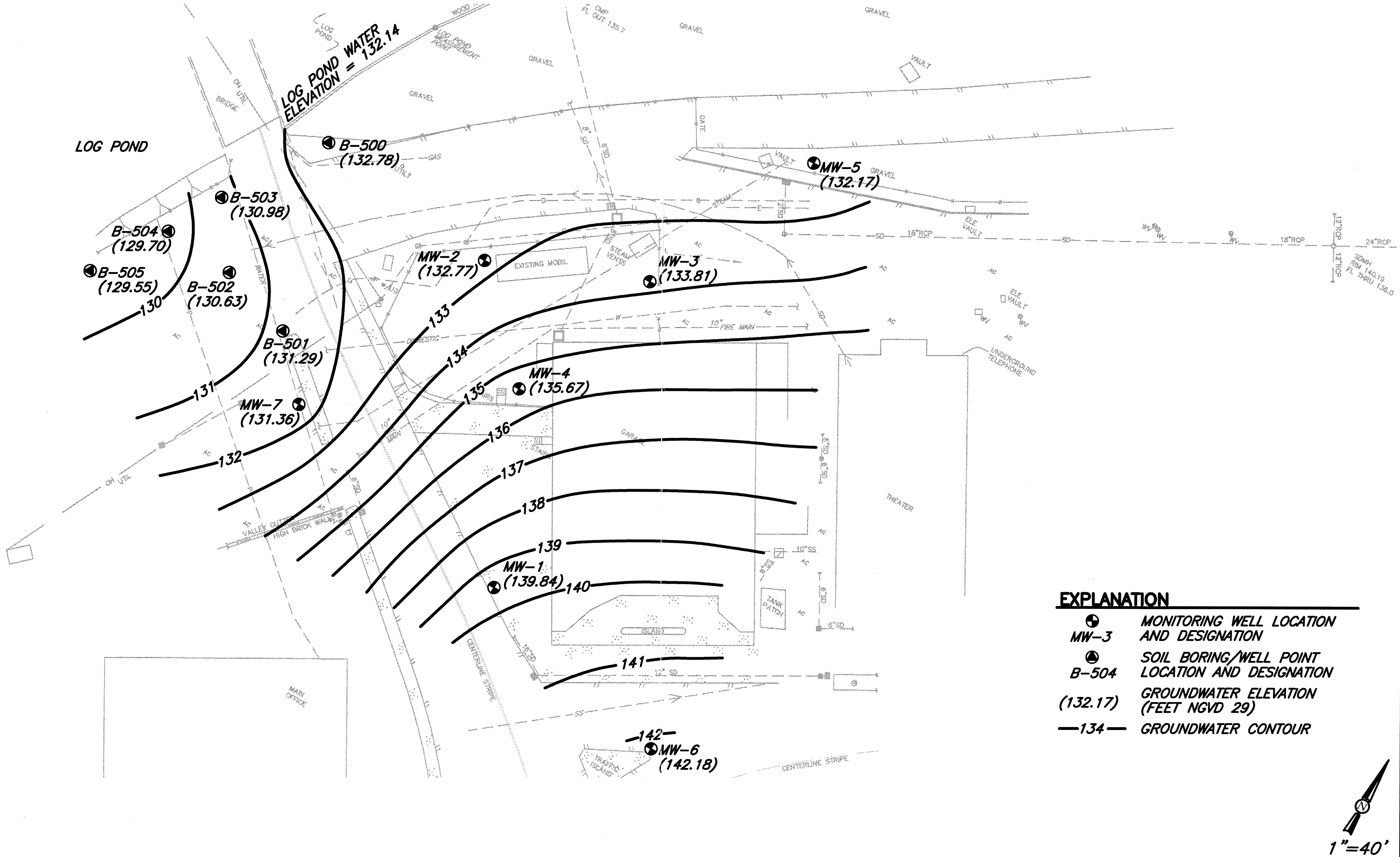
Sample Location	TPHMO[2]	TPHD[2]	TPHG[2]	B[3]	T[3]	E[3]	X[3]	MTBE[3]
B-500	**460[4]**	<50[5]	<50	**<0.50**	<0.50	<0.50	<0.50	**<3.0**
B-501	**4,000[4]**	<500	<50	**<0.50**	<0.50	<0.50	<0.50	**<3.0**
B-502	**480[4]**	<50	<50	**<0.50**	**0.96**	<0.50	**0.96**	**<3.0**
B-503	**650[4]**	**53[6]**	<50	**<0.50**	**0.82**	<0.50	<0.50	**<3.0**
B-504	**14,000[4]**	<500	<50	**<0.50**	<0.50	<0.50	<0.50	**<3.0**
B-505	**720[4]**	<50	<50	**<0.50**	<0.50	<0.50	<0.50	**<3.0**
B-506	**690[4]**	<50	<50	**<0.50**	<0.50	<0.50	<0.50	**<3.0**
B-507	**460[4]**	**100[7]**	<50	**<0.50**	<0.50	<0.50	<0.50	**<3.0**

1. ug/L: micrograms per Liter
2. Total Petroleum Hydrocarbons as Motor Oil (TPHMO), as Diesel (TPHD), and as Gasoline (TPHG), analyzed in general accordance with EPA Method No. 8015B.
3. Benzene (B), Toluene (T), Ethylbenzene (E), Xylenes (X), and Methyl Tertiary-Butyl Ether (MTBE) analyzed in general accordance with EPA Method No. 8021B.
4. Does not have the typical pattern of fresh motor oil, however, the results reported represent the amount of material in the motor oil range.
5. <: Denotes a value that is "less than" the method detection limit.
6. Contains material in the diesel range of molecular weights, but the material does not exhibit the peak pattern typical of diesel oil.
7. Contains material similar to degraded or weathered diesel oil.

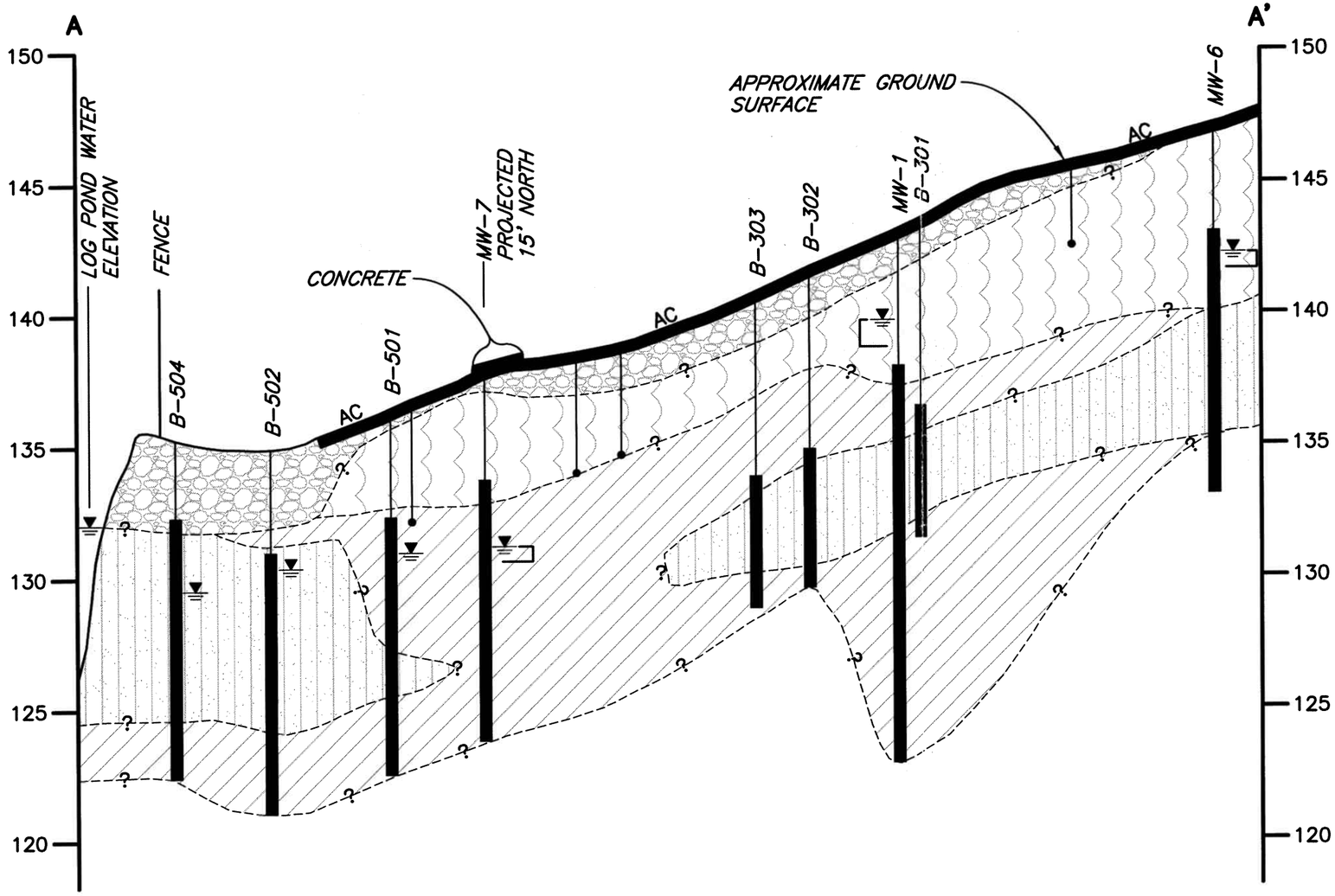
3.3 Hydrogeology

Depth-to-groundwater measurements were collected on March 10, 2006. The direction of groundwater flow on March 10, 2006 was to the west-northwest with an approximate gradient of 0.07. Figure 4 shows groundwater contours on March 10, 2006. Groundwater elevations are presented in Table 3. Historic monitoring data are included in Appendix B.

With the exception of B-500, groundwater levels in the temporary well points (B-501 through B-505) were below the elevation of the log pond water surface. Therefore, it does not appear that the log pond is hydraulically connected to shallow groundwater downgradient from the company garage. At well point B-500, a large puddle was present nearby, and surface infiltration may have contributed to the higher water elevation. A generalized hydrogeologic cross section is shown as Figure 5.


LOG POND
LOG POND WATER ELEVATION = 132.14
B-500 (132.78)
B-503 (130.98)
B-504 (129.70)
B-505 (129.55)
B-502 (130.63)
B-501 (131.29)
MW-7 (131.36)
MW-2 (132.77)
MW-3 (133.81)
MW-5 (132.17)
MW-4 (135.67)
MW-1 (139.84)
MW-6 (142.18)
130
131
132
133
134
135
136
137
138
139
140
141
142
EXISTING MOBIL
GARAGE
ISLAND
TANK PATCH
THEATER
MAIN OFFICE
TRAFFIC ISLAND
CENTERLINE STRIPE
10" FIRE MAIN
UNDERGROUND TELEPHONE
LOG POND MEASUREMENT POINT
GRAVEL
BRIDGE
VALLEY GUTTER
HIGH BRICK WALL
SDMH RIM 140.19 FL THRU 136.0
EXPLANATION
MW-3 MONITORING WELL LOCATION AND DESIGNATION
B-504 SOIL BORING/WELL POINT LOCATION AND DESIGNATION
(132.17) GROUNDWATER ELEVATION (FEET NGVD 29)
—134— GROUNDWATER CONTOUR
N
1"=40'

SHN Consulting Engineers & Geologists, Inc.	PALCO Company Garage LOP #12272 Scotia, California	Groundwater Contours March 10, 2006 SHN 089097.120
	March 2006	089097.120-GWC-MAR-2006 — Figure 4



EXPLANATION

- FILL, GRAVELY
- FILL, CLAYEY
- SILTY CLAY OR CLAYEY SILT
- SILTY SAND OR CLAYEY SAND
- WATER ELEVATION MARCH 10, 2006 (FEET NGVD 29)
- SCREENED INTERVAL
- RANGE OF GROUNDWATER ELEVATIONS (NGVD 29)
- UNDERGROUND UTILITY
- AC — ASPHALTIC CONCRETE SURFACE

SCALE: 1"=40' HORIZ
1"=5' VERT

Consulting Engineers & Geologists, Inc.

PALCO Company Garage
LOP #12272
Scotia, California

Generalized Hydrogeologic Cross Section
SHN 089097.120

March 2006 | 089097-120-SECT-AA | Figure 5

Table 3 Groundwater Elevations, March 10, 2006 PALCO Company Garage, Scotia, California			
Sample Location	**Measuring Point Elevation (Feet NGVD 29)[1]**	**Depth-to-Water (Feet)[2]**	**Groundwater Elevation (Feet NGVD 29)[1]**
MW-1	142.64	2.80	139.84
MW-2	137.66	4.89	132.77
MW-3	138.29	4.48	133.81
MW-4	139.74	4.07	135.67
MW-5	136.00	3.83	132.17
MW-6	146.95	4.77	142.18
MW-7	137.69	6.33	131.36
Log Pond Surface	134.49	2.35	132.14
B-500	137.23	4.45	132.78
B-501	138.74	7.45	131.29
B-502	137.74	7.11	130.63
B-503	137.36	6.38	130.98
B-504	136.90	7.20	129.70
B-505	136.84	7.29	129.55
1. Relative to NGVD 29 (National Geodetic Vertical Datum 1929) 2. Below top of casing or measurement point			

4.0 Discussion and Recommendations

No constituent of concern was detected above the method detection limits in any of the soil samples collected during this investigation.

TPHMO was detected in each groundwater sample collected from the temporary well points. The highest concentration was detected in well point B-504. At this well point, a large wood fragment was present at approximately 6 feet BGS, which is below the groundwater level at this location. Low concentrations of TPHD were detected in two groundwater samples collected from the temporary well points. The TPHMO and TPHD detected in groundwater samples may not be from petroleum hydrocarbons, but from naturally occurring carbon and/or wood debris present in site soils, which is eluting in the range of petroleum hydrocarbons.

TPHMO was analyzed for in groundwater samples from site monitoring wells MW-1 through MW-6 in March 2004, and from MW-7 in March 2005. TPHMO was only detected in monitoring well MW-3 (at a concentration of 230 ug/L) (SHN, May 2004 and May 2005). TPHMO has been detected in several groundwater samples from temporary well points installed at the site. A possible explanation for the difference in TPHMO concentrations (in groundwater samples from monitoring wells versus well points) may be due to the high amount of sediment present in groundwater samples collected from temporary well points, which may contain naturally occurring carbon which elutes in the range of petroleum hydrocarbons.

TPHG and benzene were not detected above the method detection limits in any groundwater samples collected from the temporary well points.

Based on the information presented above, the extent of contamination from the former USTs at the company garage site has been defined. The groundwater contamination does not appear to be impacting the log pond.

5.0 References Cited

SHN Consulting Engineers & Geologists, Inc. (2000). *December 1999 Subsurface Investigation Report of Findings, PALCO Company Garage, Scotia, CA, HCDEH LOP #12272.* Eureka: SHN.

---. (January 2001). *November 2000 Site Investigation Report of Findings, PALCO Company Garage, Scotia, CA, HCDEH LOP #12272.* Eureka: SHN.

---. (2003). *Remedial Action Work Plan PALCO Company Garage, Scotia, California; LOP #12272.* Eureka: SHN.

---.(May 2004). *Report of Findings and First Quarter 2004 Groundwater Monitoring Report PALCO Company Garage, Scotia, California; LOP #12272.* Eureka: SHN

---.(December 2004). *Report of Findings for Additional Site Investigation PALCO Company Garage, Scotia, California; LOP #12272.* Eureka: SHN.

---.(May 2005). *Report of Findings and First Half 2005 Groundwater Monitoring Report, PALCO Company Garage, Scotia, California; LOP #12272.* Eureka: SHN.

June 9, 2003, PALCO submitted the RAP.

March 6, 2003, PALCO submitted a Remedial Action Feasibility Study

Appendix A

Field Notes

CONSULTING ENGINEERS & GEOLOGISTS, INC.
812 W. Wabash • Eureka, CA 95501-2138 • 707/441-8855 • FAX: 707/441-8877 • shninfo@shn-engr.com

DAILY FIELD REPORT

Project Name: PALCO CO. GARAGE	Client/Owner: PALCO	Job No.: 089097.120
		Date: 3-9-06
		DFR Sequence No.: 1
General Location Of Work: SCOTIA, CA	Owner/Client Representative: BOB VOGT	Day Of Week: THURS
		Project Engineer: M LAY
General Contractor: FISCH	Contractors Onsite	Supervisor: R. Rivera
Type Of Work	Weather: RAIN	Technician: A Melody

7:00 ON SITE - SAFETY MEETING W/ FISCH (DAVE), SHN - A MELODY, RR. - SET UP @ B-500 NEAR BRIDGE & FENCE CORE TO 14' SET PVC WP

8:15 @ B-501 CORE TO 14' SET WP

9:40 @ B-502 CORE TO 14' SET WP - BARELY GOT WP CASING INSTALLED DUE TO FILL COLLAPSE

10:10 @ B-503 CORE TO 14' SET WP

10:40 @ B-504 CORE TO 14' DIFFICULTY SETTING WELLPOINT - HAD TO DRIVE W/ SOLID TIP 6-7' TO GET THROUGH WOOD - WELLPOINT ~ 13' DEEP

11:15 @ B-505 CORE TO 14' SET WP

11:50 @ B-506 CORE TO 14' - FILL (CHANNEL COLLAPSING) CAN'T INSTALL WP AFTER 3 TRIES TO CLEAR HOLE DRIVE TO 14' W/ SS WELLPOINT SCREEN SAMPLER SCREEN 10-14' - COLLECT WATER SAMPLE

12:50 @ B-507 CORE TO 12' - SIMILAR PROBLEMS @ B-506 INSTALLING WP - DRIVE SS WELLPOINT SCREEN SAMPLER TO 10' SCREEN 6-10 COLLECT GROUNDWATER SAMPLES

13:30 FINISH @ B-507 + COLLECT GW SAMPLES FROM B-500 THROUGH B-505 - ALL SAMPLES COLLECTED W/ NEW POLY TUBING & CHECK VALVE

15:00 CLEAN UP & PUT CONES @ ALL WELLPOINTS

15:30 OFF SITE

Signature and Date	Copy given to:	Reported By:

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812 W. Wabash • Eureka, CA 95501-2138 • 707/441-8855 • FAX: 707/441-8877 • shninfo@shn-engr.com

DAILY FIELD REPORT

Project Name: PALCO Co. GARAGE	Client/Owner: PALCO	Job No.: 089097.120
		Date: 3-10-06
		DFR Sequence No.: 2
General Location Of Work: SCOTIA, CA	Owner/Client Representative: BOB VOGT	Day Of Week: FRIDAY
		Project Engineer: M. LAY
General Contractor: FISCH	Contractors Onsite	Supervisor: R. RUEBEN
Type Of Work: SURVEY/GW LEVELS/W.P. DEST.	Weather: RAIN / SNOW	Technician: C. FISHER

9:00 ONSITE - REMOVE CAPS & LIDS ON ALL WELLS

9:20 BEGIN TAKING WATER LEVELS ON ALL WELLS / WELLPOINTS

10:15 SET UP FOR SURVEY - SURVEY ELEVATIONS

11:00 MEASURE LOCATIONS FOR MAP - REMOVE ALL WELLPOINTS - BACKFILL W/ BENTONITE SECURE ALL WELLS

~ 5 GALLONS OF WATER TO SCOTIA WWTP FROM YESTERDAY

Signature and Date	Copy given to:	Reported By:

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DAILY FIELD REPORT

Job No.: 089097.120
Date: 10th Mar 06
DFR Sequence No.: 2
Day Of Week: Friday

Project Name	Client/Owner	Project Engineer
PALCO Company Garage	PALCO	Manty Lay
General Location Of Work	**Owner/Client Representative**	**Supervisor**
Company Garage	BOB VOGT	Roland Reuben
General Contractor	**Contractors Onsite**	**Technician**
		Chris Fisher
Type Of Work	**Weather**	
Survey	Snow	

Well	Elev	Sidewall	Fence Post	Δ FROM MW-7
MW-7	4.37			
Log Pond	7.54			
B-500	4.83	88.80	47.75	-0.46
B-501	3.32	2.85	72.60	+1.05
B-502	4.32	38.10	41.90	+ 0.05
B-503	4.70	68.30	9.05	-0.33
B-504	5.16	71.70	37.80	-0.79
B-505	5.22	91.10	73.60	- 0.85
MW-7	4.37			
Log Pond	7.54			
B-506	NO WELLPOINT	101.90	111.85	
B-507	"	44.70	59.80	
		← 75.2 →		

ELEVATIONS FROM TOP OF CASING @ WELLPOINTS - ALL WELLPOINTS TOC ABOVE GRADE

Signature and Date	Copy given to:	Reported By:

Palco Company Garage
089097.120
21st Mar '06
C. Fisher

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Groundwater Elevations

Job No.: 089097.120 Name: R RUEBER / C FISH

Client: PALCO Date: 3-10-16

Location: PALCO Company Garage, Scotia, CA Weather: [illegible] / SNOW

Sample Location	Time of Reading	Top of Casing Elevation (feet) NGVD29	Depth To Water (feet)	Water Surface Elevation (feet)
MW-1	943	142.64	2.80	139.84
MW-2	937	137.66	4.89	132.77
MW-3	948	138.29	4.48	133.81
MW-4	946	139.74	4.07	135.67
MW-5	932	136.00	3.83	132.17
MW-6	940	146.95	4.77	142.18
MW-7	953	137.69 ~~146.89~~	6.33	131.36
POND ELEVATION	930	134.49	2.35	132.14
B-501	954	138.74	7.45	131.29
B-502	958	137.74	7.11	130.63
B-500	959	137.23	4.45	132.78
B-503	1000	137.36	6.38	130.98
B-504	1003	136.90	7.20	129.70
B-505	1004	136.84	7.29	129.55

Appendix B

Soil Boring Logs

Consulting Engineers & Geologists, Inc.

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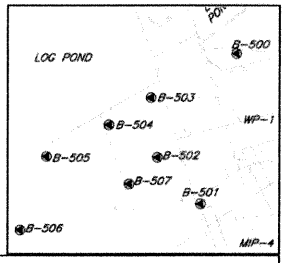
WELLPOINT LOG
B-500

PROJ. NAME: PALCO Company Garage
PROJ. NUMBER: 089097.120
DRILLER: Fisch Drilling
DRILLING METHOD: GeoProbe
SAMPLER TYPE: Macro Core
LOGGED BY: R. Rueber

LOCATION: Scotia, CA
GROUND ELEVATION:--
DEPTH OF BORING/WELLPOINT:14.0 / 14.0 Feet BGS
DEPTH TO FIRST WATER: ~3.45 Feet BGS
SCREEN INTERVAL: 4.0-14.0 Feet BGS
DATE: 3/9/06



DEPTH (Feet BGS)	WATER LEVEL	SAMPLE: OVA READING (ppm)	SAMPLE: BLOWS / 6"	SAMPLE: RECOVERY (%)	SAMPLE: DRILLING	SAMPLE: LABORATORY	USCS	LITHOLOGY PATTERN	SOIL DESCRIPTION	REMARKS	WELLPOINT CONSTRUCTION
0							SW		FILL, SAND, fine to coarse, gravelly, fine to coarse, to 4", rounded, dense, moist, few small wood fragments		Bentonite Chips
				25							
	▼						ML		SILT, sandy, fine, trace clay, trace gravel, fine, rounded, medium stiff, slightly moist, greenish grey, few brick fragments, few roots	Contact approximate DTW ~ 3.45 Feet BGS (3/10/06)	3/4" SCH 40 PVC Blank
		0									
5									Wood Fragment		
				90							2/12 Monterey Sand
		0							SILT, as above, with clay		
10				90							3/4" SCH 40 PVC Screen (0.010 slot)
		0							Soft, moist interval 12-13'		
				90			ML		SILT, with sand, fine, few gravel, fine, rounded, medium stiff, slightly moist, dark greenish grey, few roots	Contact approximate	
		0									
15									Total depth of boring = 14 Feet BGS Backfilled with bentonite 3/10/06		

BORING LOG

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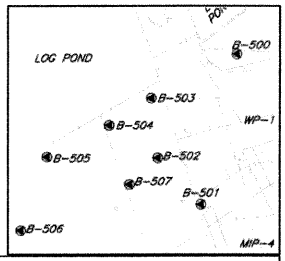
WELLPOINT LOG
B-501



PROJ. NAME: PALCO Company Garage
PROJ. NUMBER: 089097.120
DRILLER: Fisch Drilling
DRILLING METHOD: GeoProbe
SAMPLER TYPE: Macro Core
LOGGED BY: R. Rueber

LOCATION: Scotia, CA
GROUND ELEVATION:--
DEPTH OF BORING/WELLPOINT:14.0 / 14.0 Feet BGS
DEPTH TO FIRST WATER: ~6.0 Feet BGS
SCREEN INTERVAL: 4.0-14.0 Feet BGS
DATE: 3/9/06

DEPTH (Feet BGS)	WATER LEVEL	SAMPLE: OVA READING (ppm)	SAMPLE: BLOWS / 6"	SAMPLE: RECOVERY (%)	SAMPLE: DRILLING	SAMPLE: LABORATORY	USCS	LITHOLOGY PATTERN	SOIL DESCRIPTION	REMARKS	WELLPOINT CONSTRUCTION
0									Asphalt (~4" thick) with baserock		
							ML/CL		SILT(FILL?), clayey, trace sand, fine, stiff, slightly moist, greenish grey, few organics		Bentonite Chips
		0		50							3/4" SCH 40 PVC Blank
5							CL		CLAY, with silt, stiff, slightly moist, greenish grey to greenish brown, few root holes		
				90			ML/CL		SILT, as above, few wood fragments	DTW ~ 6.0 Feet BGS (3/10/06)	2/12 Monterey Sand
		0									
							SM/ML		SAND, fine, silty, loose, moist, greenish grey, few fine organics		3/4" SCH 40 PVC Screen (0.010 slot)
10				90			CL		CLAY, as above, very stiff		
		0									
				50							
		0									
15									Total depth of boring = 14 Feet BGS Backfilled with bentonite 3/10/06		

BORING LOG

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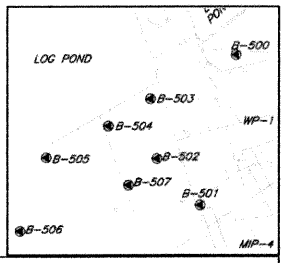
WELLPOINT LOG
B-502



PROJ. NAME: PALCO Company Garage
PROJ. NUMBER: 089097.120
DRILLER: Fisch Drilling
DRILLING METHOD: GeoProbe
SAMPLER TYPE: Macro Core
LOGGED BY: R. Rueber

LOCATION: Scotia, CA
GROUND ELEVATION:--
DEPTH OF BORING/WELLPOINT:14.0 / 14.0 Feet BGS
DEPTH TO FIRST WATER: ~5.5 Feet BGS
SCREEN INTERVAL: 4.0-14.0 Feet BGS
DATE: 3/9/06

DEPTH (Feet BGS)	WATER LEVEL	SAMPLE: OVA READING (ppm)	SAMPLE: BLOWS / 6"	SAMPLE: RECOVERY (%)	SAMPLE: DRILLING	SAMPLE: LABORATORY	USCS	LITHOLOGY PATTERN	SOIL DESCRIPTION	REMARKS	WELLPOINT CONSTRUCTION
0							GW		FILL, GRAVEL, fine to coarse, rounded, sandy, fine to coarse, silty, medium dense, slightly moist to moist, medium brown		Bentonite Chips
				50							
							ML		SILT, sandy, fine, medium stiff, slightly moist, greenish grey	Contact Approximate	3/4" SCH 40 PVC Blank
		0									
							SM		SAND, fine, silty, medium dense, moist to wet, greenish grey	Gradational Contact	
5	▼									DTW ~ 5.5 Feet BGS (3/10/06)	
				80							2/12 Monterey Sand
									Few gravel, fine, rounded		
		0									
											3/4" SCH 40 PVC Screen (0.010 slot)
10				80					Mottled greenish grey and reddish brown		
							CL		CLAY, silty, with sand, fine, stiff, slightly moist, mottled greenish grey and reddish brown		
		0									
				90							
		0									
15									Total depth of boring = 14 Feet BGS Backfilled with bentonite 3/10/06		

BORING LOG

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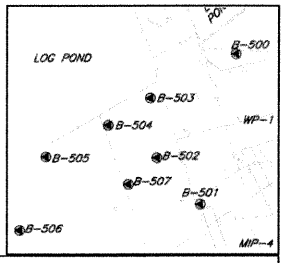
WELLPOINT LOG
B-503



PROJ. NAME: PALCO Company Garage
PROJ. NUMBER: 089097.120
DRILLER: Fisch Drilling
DRILLING METHOD: GeoProbe
SAMPLER TYPE: Macro Core
LOGGED BY: R. Rueber

LOCATION: Scotia, CA
GROUND ELEVATION:--
DEPTH OF BORING/WELLPOINT: 14.0 / 14.0 Feet BGS
DEPTH TO FIRST WATER: ~4.5 Feet BGS
SCREEN INTERVAL: 4.0-14.0 Feet BGS
DATE: 3/9/06

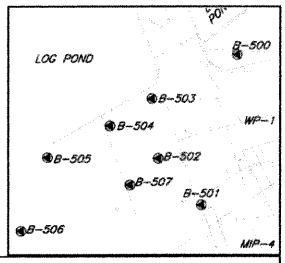
DEPTH (Feet BGS)	WATER LEVEL	SAMPLE: OVA READING (ppm)	SAMPLE: BLOWS / 6"	SAMPLE: RECOVERY (%)	SAMPLE: DRILLING	SAMPLE: LABORATORY	USCS	LITHOLOGY PATTERN	SOIL DESCRIPTION	REMARKS	WELLPOINT CONSTRUCTION
0							GW		FILL, GRAVEL, fine, rounded, sandy, fine to coarse, silty, dense, slightly moist, medium brown		Bentonite Chips
				50							
		0							Wood Fragment		3/4" SCH 40 PVC Blank
	▼						SM		SAND, fine, silty, trace clay, medium dense, slightly moist, greenish grey	DTW ~4.5 Feet BGS (3/10/06)	
5				50							2/12 Monterey Sand
									@7-8' Gravelly, fine, moist		
		0							8-11' Soft 8-9' Wet		
											3/4" SCH 40 PVC Screen (0.010 slot)
10				90					Slightly moist, clayey		
							CL		CLAY, silty, stiff, slightly moist, mottled greenish grey and reddish brown, few roots		
		0									
				90							
		0									
15									Total depth of boring = 14 Feet BGS Backfilled with bentonite 3/10/06		

BORING LOG

Consulting Engineers & Geologists, Inc.

812 West Wabash, Eureka, CA ph. (707) 441-8855 fax. (707) 441-8877

WELLPOINT LOG
B-504



PROJ. NAME: PALCO Company Garage
PROJ. NUMBER: 089097.120
DRILLER: Fisch Drilling
DRILLING METHOD: GeoProbe
SAMPLER TYPE: Macro Core
LOGGED BY: R. Rueber

LOCATION: Scotia, CA
GROUND ELEVATION:--
DEPTH OF BORING/WELLPOINT:14.0 / 14.0 Feet BGS
DEPTH TO FIRST WATER: ~5.5 Feet BGS
SCREEN INTERVAL: 4.0-14.0 Feet BGS
DATE: 3/9/06

DEPTH (Feet BGS)	WATER LEVEL	SAMPLE: OVA READING (ppm)	SAMPLE: BLOWS / 6"	SAMPLE: RECOVERY (%)	SAMPLE: DRILLING	SAMPLE: LABORATORY	USCS	LITHOLOGY PATTERN	SOIL DESCRIPTION	REMARKS	WELLPOINT CONSTRUCTION
0				50			GW		FILL, GRAVEL, fine, rounded, sandy, fine to coarse, silty, medium dense, slighlty moist, medium brown with reddish brown and dark grey zones		Bentonite Chips
											3/4" SCH 40 PVC Blank
		0					SM		FILL, SAND, fine, silty, medium dense, slightly moist, mottled greenish grey and dark grey	Contact Approximate DTW ~ 4.5 Feet BGS (3/10/06)	
5	▼										
				100					Chunk of wood 6-6.5'		2/12 Monterey Sand
									No sample, drive thru wood		
		0					SM/SC		SAND, fine, silty, clayey, soft to medium dense, slightly moist to moist, greenish grey		
10				90							3/4" SCH 40 PVC Screen (0.010 slot)
							CL		CLAY, silty trace sand, fine, very stiff, slightly moist, mottled greenish grey and reddish brown	Contact Approximate	
		0									
				90							
		0									
15									Total depth of boring = 14 Feet BGS Backfilled with bentonite 3/10/06		

BORING LOG

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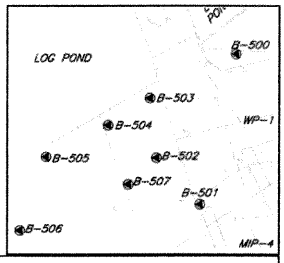
WELLPOINT LOG
B-505



PROJ. NAME: PALCO Company Garage
PROJ. NUMBER: 089097.120
DRILLER: Fisch Drilling
DRILLING METHOD: GeoProbe
SAMPLER TYPE: Macro Core
LOGGED BY: R. Rueber

LOCATION: Scotia, CA
GROUND ELEVATION:--
DEPTH OF BORING/WELLPOINT:14.0 / 14.0 Feet BGS
DEPTH TO FIRST WATER: ~6.0 Feet BGS
SCREEN INTERVAL: 4.0-14.0 Feet BGS
DATE: 3/9/06

DEPTH (Feet BGS)	WATER LEVEL	SAMPLE: OVA READING (ppm)	SAMPLE: BLOWS / 6"	SAMPLE: RECOVERY (%)	SAMPLE: DRILLING	SAMPLE: LABORATORY	USCS	LITHOLOGY PATTERN	SOIL DESCRIPTION	REMARKS	WELLPOINT CONSTRUCTION
0									FILL, GRAVEL, fine, sandy, fine to coarse, silty, medium dense, slightly moist, medium brown and dark grey		Bentonite Chips
				70							
									SILT, clayey, stiff, slightly moist, mottled medium and reddish brown, with roots		3/4" SCH 40 PVC Blank
		0									
5									CLAY, silty, slightly moist, mottled medium grey and reddish brown, few roots	DTW ~ 6.0 Feet BGS (3/10/06)	2/12 Monterey Sand
				?							
									No Recovery		
		0									
									SAND, fine, silty, with clay, medium dense, moist, medium grey		
									CLAY, silty, trace sand, fine, stiff, slightly moist, mottled medium grey and reddish brown		3/4" SCH 40 PVC Screen (0.010 slot)
10				?							
		0							Become sandy, medium stiff		
				?							
		0									
15									Total depth of boring = 14 Feet BGS Backfilled with bentonite 3/10/06		

BORING LOG

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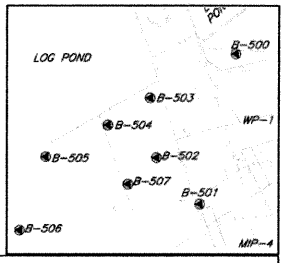
WELLPOINT LOG
B-506



PROJ. NAME: PALCO Company Garage
PROJ. NUMBER: 089097.120
DRILLER: Fisch Drilling
DRILLING METHOD: GeoProbe
SAMPLER TYPE: Macro Core
LOGGED BY: R. Rueber

LOCATION: Scotia, CA
GROUND ELEVATION:--
DEPTH OF BORING/WELLPOINT:14.0 / 14.0 Feet BGS
DEPTH TO FIRST WATER: ~7.5 Feet BGS
SCREEN INTERVAL: 10.0-14.0 Feet BGS
DATE: 3/9/06

DEPTH (Feet BGS)	WATER LEVEL	SAMPLE: OVA READING (ppm)	SAMPLE: BLOWS / 6"	SAMPLE: RECOVERY (%)	SAMPLE: DRILLING	SAMPLE: LABORATORY	USCS	LITHOLOGY PATTERN	SOIL DESCRIPTION	REMARKS	WELLPOINT CONSTRUCTION
0				40			GW		FILL, GRAVEL, fine to coarse, sandy, fine to coarse, silty, medium dense, slightly moist, medium brown		
										Contact Approximate	Stainless Steel Rod
		0					CL		CLAY, silty, trace sand, fine, stiff, slightly moist, mottled medium brown and reddish brown, few organics and roots		
5				90						@ 4' Color change to medium grey with few dark greenish mottles, very stiff	
										Contact Approximate	
	▽	0		90			CL		CLAY, silty, with sand, fine, stiff, slightly moist, mottled medium grey reddish brown, few roots		Stainless Steel Retractable Screen (10-14')
10		0		90							
										Contact Approximate	
							ML/SM		SILT, sandy, fine, medium stiff, slightly moist to moist, mottled medium grey and reddish brown, few roots		
15									Total depth of boring = 12 Feet BGS Backfilled with bentonite 3/9/06		

BORING LOG

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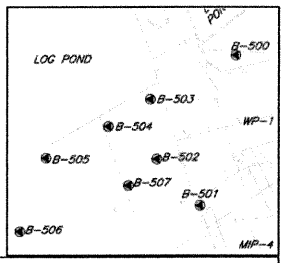
812 West Wabash, Eureka, CA ph. (707) 441-8855 fax. (707) 441-8877

WELLPOINT LOG
B-507



PROJ. NAME: PALCO Company Garage
PROJ. NUMBER: 089097.120
DRILLER: Fisch Drilling
DRILLING METHOD: GeoProbe
SAMPLER TYPE: Macro Core
LOGGED BY: R. Rueber

LOCATION: Scotia, CA
GROUND ELEVATION:--
DEPTH OF BORING/WELLPOINT:12.0 / 10.0 Feet BGS
DEPTH TO FIRST WATER: --
SCREEN INTERVAL: 6.0-10.0 Feet BGS
DATE: 3/9/06

DEPTH (Feet BGS)	WATER LEVEL	SAMPLE: OVA READING (ppm)	SAMPLE: BLOWS / 6"	SAMPLE: RECOVERY (%)	SAMPLE: DRILLING	SAMPLE: LABORATORY	USCS	LITHOLOGY PATTERN	SOIL DESCRIPTION	REMARKS	WELLPOINT CONSTRUCTION
0				50			GW		FILL, GRAVEL, fine to coarse, rounded, to 4", sandy, fine to coarse, with silt, medium dense, slightly moist, medium brown		Stainless Steel Rod
		0					ML		SILT, sandy, fine, medium stiff, slightly moist, dark grey with few organics, few roots		
5				90					Becomes sandier, moist		
							CL		CLAY, silty, trace sand, fine, stiff, slightly moist, mottled medium grey and reddish brown, few roots	Contact Approximate	
		0									Stainless Steel Retractable Screen (6-10')
10				90					Becomes sandy		
		0							Total depth of boring = 12 Feet BGS Backfilled with bentonite 3/9/06		
15											

BORING LOG

Appendix C

Laboratory Analytical Reports

REC'D MAR 2 0 2006

NORTH COAST LABORATORIES LTD.

March 16, 2006

Pacific Lumber-M
P.O. Box 37
125 Main St
Scotia, CA 95565-0037
Attn: Bob Vogt / Environmental Service

Order No.: 0603278
Invoice No.: 56912
PO No.: M-75239
ELAP No. 1247-Expires July 2006

RE: 089097.120, PALCO CO. GARAGE

SAMPLE IDENTIFICATION

Fraction	Client Sample Description
01A	B-502 @ 6.5'
02A	B-503 @ 7.5'
03A	B-504 @ 5.5'
04A	B-505 @ 8'
05A	B-506 @ 7.5'
06A	B-507 @ 6.5'
07A	B-501 @ 7.5'
08A	B-500 @ 7.5'
09A	B-507
09D	B-507
10A	B-506
10D	B-506
11A	B-504
11D	B-504
12A	B-505
12D	B-505
13A	B-502
13D	B-502
14A	B-501
14D	B-501
15A	B-503
15D	B-503
16A	B-500
16D	B-500

ND = Not Detected at the Reporting Limit

Limit = Reporting Limit

All solid results are expressed on a wet-weight basis unless otherwise noted.

REPORT CERTIFIED BY

Laboratory Supervisor(s) — QA Unit — (FOR JGC) Jesse G. Chaney, Jr., Laboratory Director

North Coast Laboratories, Ltd. **Date:** *16-Mar-06*

CLIENT: Pacific Lumber-M
Project: 089097.120, PALCO CO. GARAGE
Lab Order: 0603278

CASE NARRATIVE

TPH as Diesel/Motor Oil - Water:
The laboratory control sample (LCS) recovery was below the lower acceptance limit for diesel. The laboratory control duplicate sample (LCSD) recovery was within the acceptable limits; therefore, the data were accepted.

Sample B-507 contains material similar to degraded or weathered diesel oil.

Sample B-503 contains material in the diesel range of molecular weights, but the material does not exhibit the peak pattern typical of diesel oil.

Samples B-504 and B-501 are being reported as not detected (ND) with a dilution for diesel oil due to matrix interference.

Samples B-507, B-506, B-504, B-505, B-502, B-501, B-503 and B-500 do not have the typical pattern of fresh motor oil. However, the results reported represent the amount of material in the motor oil range.

BTEX - Water:
The surrogate recoveries for the method blank and sample B-505 were below the lower acceptance limit. The response of the reporting limit standard was such that the analytes would have been detected even with the low recovery; therefore, the data were accepted.

The laboratory control sample (LCS) recovery was above the upper acceptance limit for MTBE. This recovery indicates that the sample results may be erroneously high. There were no detectable levels of the analyte in the samples; therefore, the data were accepted.

The relative percent difference (RPD) for the laboratory control samples was above the acceptance limit for MTBE. This indicates that the results could be variable. Since there were no detectable levels of the analyte in the samples, the data were accepted.

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Date: 16-Mar-06
WorkOrder: 0603278

ANALYTICAL REPORT

Client Sample ID: B-502 @ 6.5' **Received:** 3/9/06 **Collected:** 3/9/06 9:50
Lab ID: 0603278-01A

Test Name: BTEX **Reference:** EPA 5035/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	0.050	µg/g	1.0	3/13/06	3/13/06
Benzene	ND	0.0050	µg/g	1.0	3/13/06	3/13/06
Toluene	ND	0.0050	µg/g	1.0	3/13/06	3/13/06
Ethylbenzene	ND	0.0050	µg/g	1.0	3/13/06	3/13/06
m,p-Xylene	ND	0.0050	µg/g	1.0	3/13/06	3/13/06
o-Xylene	ND	0.0050	µg/g	1.0	3/13/06	3/13/06
Surrogate: Cis-1,2-Dichloroethylene	96.1	71.8-135	% Rec	1.0	3/13/06	3/13/06

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3550/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND	1.0	µg/g	1.0	3/13/06	3/13/06
TPHC Motor Oil	ND	10	µg/g	1.0	3/13/06	3/13/06

Test Name: TPH as Gasoline **Reference:** EPA 5035/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas (C6-C14)	ND	1.0	µg/g	1.0	3/13/06	3/13/06

Client Sample ID: B-503 @ 7.5' **Received:** 3/9/06 **Collected:** 3/9/06 10:25
Lab ID: 0603278-02A

Test Name: BTEX **Reference:** EPA 5035/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	0.050	µg/g	1.0	3/13/06	3/13/06
Benzene	ND	0.0050	µg/g	1.0	3/13/06	3/13/06
Toluene	ND	0.0050	µg/g	1.0	3/13/06	3/13/06
Ethylbenzene	ND	0.0050	µg/g	1.0	3/13/06	3/13/06
m,p-Xylene	ND	0.0050	µg/g	1.0	3/13/06	3/13/06
o-Xylene	ND	0.0050	µg/g	1.0	3/13/06	3/13/06
Surrogate: Cis-1,2-Dichloroethylene	96.5	71.8-135	% Rec	1.0	3/13/06	3/13/06

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3550/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND	1.0	µg/g	1.0	3/13/06	3/13/06
TPHC Motor Oil	ND	10	µg/g	1.0	3/13/06	3/13/06

Test Name: TPH as Gasoline **Reference:** EPA 5035/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas (C6-C14)	ND	1.0	µg/g	1.0	3/13/06	3/13/06

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Date: 16-Mar-06
WorkOrder: 0603278

ANALYTICAL REPORT

Client Sample ID: B-504 @ 5.5' **Received:** 3/9/06 **Collected:** 3/9/06 11:00
Lab ID: 0603278-03A

Test Name: BTEX **Reference:** EPA 5035/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	0.050	µg/g	1.0	3/13/06	3/13/06
Benzene	ND	0.0050	µg/g	1.0	3/13/06	3/13/06
Toluene	ND	0.0050	µg/g	1.0	3/13/06	3/13/06
Ethylbenzene	ND	0.0050	µg/g	1.0	3/13/06	3/13/06
m,p-Xylene	ND	0.0050	µg/g	1.0	3/13/06	3/13/06
o-Xylene	ND	0.0050	µg/g	1.0	3/13/06	3/13/06
Surrogate: Cis-1,2-Dichloroethylene	97.8	71.8-135	% Rec	1.0	3/13/06	3/13/06

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3550/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND	1.0	µg/g	1.0	3/13/06	3/13/06
TPHC Motor Oil	ND	10	µg/g	1.0	3/13/06	3/13/06

Test Name: TPH as Gasoline **Reference:** EPA 5035/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas (C6-C14)	ND	1.0	µg/g	1.0	3/13/06	3/13/06

Client Sample ID: B-505 @ 8' **Received:** 3/9/06 **Collected:** 3/9/06 11:30
Lab ID: 0603278-04A

Test Name: BTEX **Reference:** EPA 5035/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	0.050	µg/g	1.0	3/13/06	3/13/06
Benzene	ND	0.0050	µg/g	1.0	3/13/06	3/13/06
Toluene	ND	0.0050	µg/g	1.0	3/13/06	3/13/06
Ethylbenzene	ND	0.0050	µg/g	1.0	3/13/06	3/13/06
m,p-Xylene	ND	0.0050	µg/g	1.0	3/13/06	3/13/06
o-Xylene	ND	0.0050	µg/g	1.0	3/13/06	3/13/06
Surrogate: Cis-1,2-Dichloroethylene	92.0	71.8-135	% Rec	1.0	3/13/06	3/13/06

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3550/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND	1.0	µg/g	1.0	3/13/06	3/13/06
TPHC Motor Oil	ND	10	µg/g	1.0	3/13/06	3/13/06

Test Name: TPH as Gasoline **Reference:** EPA 5035/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas (C6-C14)	ND	1.0	µg/g	1.0	3/13/06	3/13/06

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Date: 16-Mar-06
WorkOrder: 0603278

ANALYTICAL REPORT

Client Sample ID: B-506 @ 7.5' **Received:** 3/9/06 **Collected:** 3/9/06 12:00
Lab ID: 0603278-05A

Test Name: BTEX **Reference:** EPA 5035/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	0.050	µg/g	1.0	3/13/06	3/13/06
Benzene	ND	0.0050	µg/g	1.0	3/13/06	3/13/06
Toluene	ND	0.0050	µg/g	1.0	3/13/06	3/13/06
Ethylbenzene	ND	0.0050	µg/g	1.0	3/13/06	3/13/06
m,p-Xylene	ND	0.0050	µg/g	1.0	3/13/06	3/13/06
o-Xylene	ND	0.0050	µg/g	1.0	3/13/06	3/13/06
Surrogate: Cis-1,2-Dichloroethylene	92.8	71.8-135	% Rec	1.0	3/13/06	3/13/06

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3550/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND	1.0	µg/g	1.0	3/13/06	3/13/06
TPHC Motor Oil	ND	10	µg/g	1.0	3/13/06	3/13/06

Test Name: TPH as Gasoline **Reference:** EPA 5035/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas (C6-C14)	ND	1.0	µg/g	1.0	3/13/06	3/13/06

Client Sample ID: B-507 @ 6.5' **Received:** 3/9/06 **Collected:** 3/9/06 13:00
Lab ID: 0603278-06A

Test Name: BTEX **Reference:** EPA 5035/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	0.050	µg/g	1.0	3/13/06	3/14/06
Benzene	ND	0.0050	µg/g	1.0	3/13/06	3/14/06
Toluene	ND	0.0050	µg/g	1.0	3/13/06	3/14/06
Ethylbenzene	ND	0.0050	µg/g	1.0	3/13/06	3/14/06
m,p-Xylene	ND	0.0050	µg/g	1.0	3/13/06	3/14/06
o-Xylene	ND	0.0050	µg/g	1.0	3/13/06	3/14/06
Surrogate: Cis-1,2-Dichloroethylene	88.0	71.8-135	% Rec	1.0	3/13/06	3/14/06

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3550/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND	1.0	µg/g	1.0	3/13/06	3/13/06
TPHC Motor Oil	ND	10	µg/g	1.0	3/13/06	3/13/06

Test Name: TPH as Gasoline **Reference:** EPA 5035/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas (C6-C14)	ND	1.0	µg/g	1.0	3/13/06	3/14/06

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Date: 16-Mar-06
WorkOrder: 0603278

ANALYTICAL REPORT

Client Sample ID: B-501 @ 7.5' **Received:** 3/9/06 **Collected:** 3/9/06 8:20
Lab ID: 0603278-07A

Test Name: BTEX **Reference:** EPA 5035/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	0.050	µg/g	1.0	3/13/06	3/14/06
Benzene	ND	0.0050	µg/g	1.0	3/13/06	3/14/06
Toluene	ND	0.0050	µg/g	1.0	3/13/06	3/14/06
Ethylbenzene	ND	0.0050	µg/g	1.0	3/13/06	3/14/06
m,p-Xylene	ND	0.0050	µg/g	1.0	3/13/06	3/14/06
o-Xylene	ND	0.0050	µg/g	1.0	3/13/06	3/14/06
Surrogate: Cis-1,2-Dichloroethylene	92.1	71.8-135	% Rec	1.0	3/13/06	3/14/06

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3550/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND	1.0	µg/g	1.0	3/13/06	3/13/06
TPHC Motor Oil	ND	10	µg/g	1.0	3/13/06	3/13/06

Test Name: TPH as Gasoline **Reference:** EPA 5035/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas (C6-C14)	ND	1.0	µg/g	1.0	3/13/06	3/14/06

Client Sample ID: B-500 @ 7.5' **Received:** 3/9/06 **Collected:** 3/9/06 7:45
Lab ID: 0603278-08A

Test Name: BTEX **Reference:** EPA 5035/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	0.050	µg/g	1.0	3/13/06	3/14/06
Benzene	ND	0.0050	µg/g	1.0	3/13/06	3/14/06
Toluene	ND	0.0050	µg/g	1.0	3/13/06	3/14/06
Ethylbenzene	ND	0.0050	µg/g	1.0	3/13/06	3/14/06
m,p-Xylene	ND	0.0050	µg/g	1.0	3/13/06	3/14/06
o-Xylene	ND	0.0050	µg/g	1.0	3/13/06	3/14/06
Surrogate: Cis-1,2-Dichloroethylene	82.4	71.8-135	% Rec	1.0	3/13/06	3/14/06

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3550/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND	1.0	µg/g	1.0	3/13/06	3/13/06
TPHC Motor Oil	ND	10	µg/g	1.0	3/13/06	3/13/06

Test Name: TPH as Gasoline **Reference:** EPA 5035/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas (C6-C14)	ND	1.0	µg/g	1.0	3/13/06	3/14/06

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Date: 16-Mar-06
WorkOrder: 0603278

ANALYTICAL REPORT

Client Sample ID: B-507 **Received:** 3/9/06 **Collected:** 3/9/06 13:30
Lab ID: 0603278-09A

Test Name: BTEX **Reference:** EPA 5030/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	3.0	µg/L	1.0		3/14/06
Benzene	ND	0.50	µg/L	1.0		3/14/06
Toluene	ND	0.50	µg/L	1.0		3/14/06
Ethylbenzene	ND	0.50	µg/L	1.0		3/14/06
m,p-Xylene	ND	0.50	µg/L	1.0		3/14/06
o-Xylene	ND	0.50	µg/L	1.0		3/14/06
Surrogate: Cis-1,2-Dichloroethylene	93.5	85-115	% Rec	1.0		3/14/06

Test Name: TPH as Gasoline **Reference:** EPA 5030/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas (C6-C14)	ND	50	µg/L	1.0		3/14/06

Client Sample ID: B-507 **Received:** 3/9/06 **Collected:** 3/9/06 13:30
Lab ID: 0603278-09D

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3510/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	100	50	µg/L	1.0	3/10/06	3/11/06
TPHC Motor Oil	460	170	µg/L	1.0	3/10/06	3/11/06

Client Sample ID: B-506 **Received:** 3/9/06 **Collected:** 3/9/06 12:30
Lab ID: 0603278-10A

Test Name: BTEX **Reference:** EPA 5030/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	3.0	µg/L	1.0		3/14/06
Benzene	ND	0.50	µg/L	1.0		3/14/06
Toluene	ND	0.50	µg/L	1.0		3/14/06
Ethylbenzene	ND	0.50	µg/L	1.0		3/14/06
m,p-Xylene	ND	0.50	µg/L	1.0		3/14/06
o-Xylene	ND	0.50	µg/L	1.0		3/14/06
Surrogate: Cis-1,2-Dichloroethylene	94.2	85-115	% Rec	1.0		3/14/06

Test Name: TPH as Gasoline **Reference:** EPA 5030/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas (C6-C14)	ND	50	µg/L	1.0		3/14/06

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Date: 16-Mar-06
WorkOrder: 0603278

ANALYTICAL REPORT

Client Sample ID: B-506 **Received:** 3/9/06 **Collected:** 3/9/06 12:30
Lab ID: 0603278-10D

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3510/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND	50	µg/L	1.0	3/10/06	3/11/06
TPHC Motor Oil	690	170	µg/L	1.0	3/10/06	3/11/06

Client Sample ID: B-504 **Received:** 3/9/06 **Collected:** 3/9/06 14:45
Lab ID: 0603278-11A

Test Name: BTEX **Reference:** EPA 5030/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	3.0	µg/L	1.0		3/14/06
Benzene	ND	0.50	µg/L	1.0		3/14/06
Toluene	ND	0.50	µg/L	1.0		3/14/06
Ethylbenzene	ND	0.50	µg/L	1.0		3/14/06
m,p-Xylene	ND	0.50	µg/L	1.0		3/14/06
o-Xylene	ND	0.50	µg/L	1.0		3/14/06
Surrogate: Cis-1,2-Dichloroethylene	89.8	85-115	% Rec	1.0		3/14/06

Test Name: TPH as Gasoline **Reference:** EPA 5030/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas (C6-C14)	ND	50	µg/L	1.0		3/14/06

Client Sample ID: B-504 **Received:** 3/9/06 **Collected:** 3/9/06 14:45
Lab ID: 0603278-11D

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3510/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND	500	µg/L	10	3/10/06	3/11/06
TPHC Motor Oil	14,000	1,700	µg/L	10	3/10/06	3/11/06

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Date: 16-Mar-06
WorkOrder: 0603278

ANALYTICAL REPORT

Client Sample ID: B-505 **Received:** 3/9/06 **Collected:** 3/9/06 14:50
Lab ID: 0603278-12A

Test Name: BTEX **Reference:** EPA 5030/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	3.0	µg/L	1.0		3/14/06
Benzene	ND	0.50	µg/L	1.0		3/14/06
Toluene	ND	0.50	µg/L	1.0		3/14/06
Ethylbenzene	ND	0.50	µg/L	1.0		3/14/06
m,p-Xylene	ND	0.50	µg/L	1.0		3/14/06
o-Xylene	ND	0.50	µg/L	1.0		3/14/06
Surrogate: Cis-1,2-Dichloroethylene	82.2	85-115	% Rec	1.0		3/14/06

Test Name: TPH as Gasoline **Reference:** EPA 5030/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas (C6-C14)	ND	50	µg/L	1.0		3/14/06

Client Sample ID: B-505 **Received:** 3/9/06 **Collected:** 3/9/06 14:50
Lab ID: 0603278-12D

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3510/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND	50	µg/L	1.0	3/10/06	3/11/06
TPHC Motor Oil	720	170	µg/L	1.0	3/10/06	3/11/06

Client Sample ID: B-502 **Received:** 3/9/06 **Collected:** 3/9/06 14:35
Lab ID: 0603278-13A

Test Name: BTEX **Reference:** EPA 5030/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	3.0	µg/L	1.0		3/14/06
Benzene	ND	0.50	µg/L	1.0		3/14/06
Toluene	0.96	0.50	µg/L	1.0		3/14/06
Ethylbenzene	ND	0.50	µg/L	1.0		3/14/06
m,p-Xylene	0.96	0.50	µg/L	1.0		3/14/06
o-Xylene	ND	0.50	µg/L	1.0		3/14/06
Surrogate: Cis-1,2-Dichloroethylene	99.1	85-115	% Rec	1.0		3/14/06

Test Name: TPH as Gasoline **Reference:** EPA 5030/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas (C6-C14)	ND	50	µg/L	1.0		3/14/06

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Date: 16-Mar-06
WorkOrder: 0603278

ANALYTICAL REPORT

Client Sample ID: B-502 **Received:** 3/9/06 **Collected:** 3/9/06 14:35
Lab ID: 0603278-13D

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3510/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND	50	µg/L	1.0	3/10/06	3/11/06
TPHC Motor Oil	480	170	µg/L	1.0	3/10/06	3/11/06

Client Sample ID: B-501 **Received:** 3/9/06 **Collected:** 3/9/06 14:25
Lab ID: 0603278-14A

Test Name: BTEX **Reference:** EPA 5030/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	3.0	µg/L	1.0		3/14/06
Benzene	ND	0.50	µg/L	1.0		3/14/06
Toluene	ND	0.50	µg/L	1.0		3/14/06
Ethylbenzene	ND	0.50	µg/L	1.0		3/14/06
m,p-Xylene	ND	0.50	µg/L	1.0		3/14/06
o-Xylene	ND	0.50	µg/L	1.0		3/14/06
Surrogate: Cis-1,2-Dichloroethylene	93.1	85-115	% Rec	1.0		3/14/06

Test Name: TPH as Gasoline **Reference:** EPA 5030/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas (C6-C14)	ND	50	µg/L	1.0		3/14/06

Client Sample ID: B-501 **Received:** 3/9/06 **Collected:** 3/9/06 14:25
Lab ID: 0603278-14D

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3510/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND	500	µg/L	10	3/10/06	3/11/06
TPHC Motor Oil	4,000	1,700	µg/L	10	3/10/06	3/11/06

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Date: 16-Mar-06
WorkOrder: 0603278

ANALYTICAL REPORT

Client Sample ID: B-503 **Received:** 3/9/06 **Collected:** 3/9/06 14:40
Lab ID: 0603278-15A

Test Name: BTEX **Reference:** EPA 5030/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	3.0	µg/L	1.0		3/14/06
Benzene	ND	0.50	µg/L	1.0		3/14/06
Toluene	0.82	0.50	µg/L	1.0		3/14/06
Ethylbenzene	ND	0.50	µg/L	1.0		3/14/06
m,p-Xylene	ND	0.50	µg/L	1.0		3/14/06
o-Xylene	ND	0.50	µg/L	1.0		3/14/06
Surrogate: Cis-1,2-Dichloroethylene	96.3	85-115	% Rec	1.0		3/14/06

Test Name: TPH as Gasoline **Reference:** EPA 5030/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas (C6-C14)	ND	50	µg/L	1.0		3/14/06

Client Sample ID: B-503 **Received:** 3/9/06 **Collected:** 3/9/06 14:40
Lab ID: 0603278-15D

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3510/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	53	50	µg/L	1.0	3/10/06	3/11/06
TPHC Motor Oil	650	170	µg/L	1.0	3/10/06	3/11/06

Client Sample ID: B-500 **Received:** 3/9/06 **Collected:** 3/9/06 14:20
Lab ID: 0603278-16A

Test Name: BTEX **Reference:** EPA 5030/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	3.0	µg/L	1.0		3/14/06
Benzene	ND	0.50	µg/L	1.0		3/14/06
Toluene	ND	0.50	µg/L	1.0		3/14/06
Ethylbenzene	ND	0.50	µg/L	1.0		3/14/06
m,p-Xylene	ND	0.50	µg/L	1.0		3/14/06
o-Xylene	ND	0.50	µg/L	1.0		3/14/06
Surrogate: Cis-1,2-Dichloroethylene	90.5	85-115	% Rec	1.0		3/14/06

Test Name: TPH as Gasoline **Reference:** EPA 5030/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas (C6-C14)	ND	50	µg/L	1.0		3/14/06

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Date: 16-Mar-06
WorkOrder: 0603278

ANALYTICAL REPORT

Client Sample ID: B-500 **Received:** 3/9/06 **Collected:** 3/9/06 14:20
Lab ID: 0603278-16D

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3510/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND	50	µg/L	1.0	3/10/06	3/11/06
TPHC Motor Oil	460	170	µg/L	1.0	3/10/06	3/11/06

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North Coast Laboratories, Ltd.

Date: 16-Mar-06

CLIENT: Pacific Lumber-M
Work Order: 0603278
Project: 089097.120, PALCO CO. GARAGE

QC SUMMARY REPORT
Method Blank

Sample ID **MB-15348** Batch ID: **15348** Test Code: **BTXES** Units: **µg/g** Analysis Date **3/13/06 8:53:52 PM** Prep Date **3/13/06**
Client ID: Run ID: **ORGC8_060313B** SeqNo: **578585**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
MTBE	ND	0.050									
Benzene	ND	0.0050									
Toluene	ND	0.0050									
Ethylbenzene	ND	0.0050									
m,p-Xylene	ND	0.0050									
o-Xylene	ND	0.0050									
Cis-1,2-Dichloroethylene	0.965	0.10	1.00	0	96.5%	72	135	0			

Sample ID **MB-3/14/06** Batch ID: **R40311** Test Code: **BTXEW** Units: **µg/L** Analysis Date **3/14/06 6:28:54 PM** Prep Date
Client ID: Run ID: **ORGC8_060314B** SeqNo: **579221**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
MTBE	ND	3.0									
Benzene	ND	0.50									
Toluene	ND	0.50									
Ethylbenzene	ND	0.50									
m,p-Xylene	ND	0.50									
o-Xylene	ND	0.50									
Cis-1,2-Dichloroethylene	0.840	0.10	1.00	0	84.0%	85	115	0			S

Sample ID **MB-15348** Batch ID: **15348** Test Code: **TPHCGS** Units: **µg/g** Analysis Date **3/13/06 8:53:52 PM** Prep Date **3/13/06**
Client ID: Run ID: **ORGC8_060313A** SeqNo: **578542**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gas (C6-C14)	0.5754	1.0									J

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Pacific Lumber-M
Work Order: 0603278
Project: 089097.120, PALCO CO. GARAGE

QC SUMMARY REPORT
Method Blank

Sample ID **MB-3/14/06** Batch ID: **R40310** Test Code: **TPHCGW** Units: **µg/L** Analysis Date **3/14/06 6:28:54 PM** Prep Date
Client ID: Run ID: **ORGC8_060314A** SeqNo: **579197**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gas (C6-C14)	ND	50									

Sample ID **MB-15343** Batch ID: **15343** Test Code: **TPHDMS** Units: **µg/g** Analysis Date **3/13/06 1:43:43 PM** Prep Date **3/13/06**
Client ID: Run ID: **ORGC7_060313A** SeqNo: **578408**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	0.2043	1.0									J
TPHC Motor Oil	ND	10									

Sample ID **MB-15332** Batch ID: **15332** Test Code: **TPHDMW** Units: **µg/L** Analysis Date **3/10/06 1:04:56 PM** Prep Date **3/10/06**
Client ID: Run ID: **ORGC7_060310A** SeqNo: **577774**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	ND	50									
TPHC Motor Oil	ND	170									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

North Coast Laboratories, Ltd.

Date: 16-Mar-06

CLIENT: Pacific Lumber-M
Work Order: 0603278
Project: 089097.120, PALCO CO. GARAGE

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID **LCS-15348** Batch ID: **15348** Test Code: **BTXES** Units: **µg/g** Analysis Date **3/13/06 4:54:53 PM** Prep Date **3/13/06**
Client ID: Run ID: **ORGC8_060313B** SeqNo: **578582**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
MTBE	0.4049	0.050	0.400	0	101%	75	124	0			
Benzene	0.05342	0.0050	0.0500	0	107%	80	128	0			
Toluene	0.05593	0.0050	0.0500	0	112%	85	126	0			
Ethylbenzene	0.05413	0.0050	0.0500	0	108%	80	126	0			
m,p-Xylene	0.1046	0.0050	0.100	0	105%	84	130	0			
o-Xylene	0.05353	0.0050	0.0500	0	107%	84	125	0			
Cis-1,2-Dichloroethylene	1.09	0.10	1.00	0	109%	72	135	0			

Sample ID **LCSD-15348** Batch ID: **15348** Test Code: **BTXES** Units: **µg/g** Analysis Date **3/13/06 5:29:15 PM** Prep Date **3/13/06**
Client ID: Run ID: **ORGC8_060313B** SeqNo: **578583**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
MTBE	0.3994	0.050	0.400	0	99.8%	75	124	0.405	1.37%	15	
Benzene	0.05373	0.0050	0.0500	0	107%	80	128	0.0534	0.583%	15	
Toluene	0.05552	0.0050	0.0500	0	111%	85	126	0.0559	0.724%	15	
Ethylbenzene	0.05484	0.0050	0.0500	0	110%	80	126	0.0541	1.32%	15	
m,p-Xylene	0.1050	0.0050	0.100	0	105%	84	130	0.105	0.311%	15	
o-Xylene	0.05363	0.0050	0.0500	0	107%	84	125	0.0535	0.189%	15	
Cis-1,2-Dichloroethylene	1.07	0.10	1.00	0	107%	72	135	1.09	1.36%	15	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Pacific Lumber-M
Work Order: 0603278
Project: 089097.120, PALCO CO. GARAGE

QC SUMMARY REPORT
Laboratory Control Spike

Sample ID **LCS-06164** Batch ID: **R40311** Test Code: **BTXEW** Units: **µg/L** Analysis Date **3/14/06 3:32:52 PM** Prep Date
Client ID: Run ID: **ORGC8_060314B** SeqNo: **579219**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
MTBE	46.92	3.0	40.0	0	117%	85	115	0			S
Benzene	5.253	0.50	5.00	0	105%	85	115	0			
Toluene	5.352	0.50	5.00	0	107%	85	115	0			
Ethylbenzene	5.330	0.50	5.00	0	107%	85	115	0			
m,p-Xylene	10.72	0.50	10.0	0	107%	85	115	0			
o-Xylene	5.380	0.50	5.00	0	108%	85	115	0			
Cis-1,2-Dichloroethylene	1.11	0.10	1.00	0	111%	85	115	0			

Sample ID **LCSD-06164** Batch ID: **R40311** Test Code: **BTXEW** Units: **µg/L** Analysis Date **3/15/06 5:52:11 AM** Prep Date
Client ID: Run ID: **ORGC8_060314B** SeqNo: **579243**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
MTBE	37.45	3.0	40.0	0	93.6%	85	115	46.9	22.4%	15	R
Benzene	5.078	0.50	5.00	0	102%	85	115	5.25	3.39%	15	
Toluene	5.161	0.50	5.00	0	103%	85	115	5.35	3.64%	15	
Ethylbenzene	5.116	0.50	5.00	0	102%	85	115	5.33	4.10%	15	
m,p-Xylene	10.28	0.50	10.0	0	103%	85	115	10.7	4.11%	15	
o-Xylene	5.136	0.50	5.00	0	103%	85	115	5.38	4.64%	15	
Cis-1,2-Dichloroethylene	1.01	0.10	1.00	0	101%	85	115	1.11	10.2%	15	

Sample ID **LCS-15348-G** Batch ID: **15348** Test Code: **TPHCGS** Units: **µg/g** Analysis Date **3/13/06 6:37:30 PM** Prep Date **3/13/06**
Client ID: Run ID: **ORGC8_060313A** SeqNo: **578539**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gas (C6-C14)	12.07	1.0	10.0	0	121%	102	128	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Pacific Lumber-M
Work Order: 0603278
Project: 089097.120, PALCO CO. GARAGE

QC SUMMARY REPORT
Laboratory Control Spike Duplicate

Sample ID **LCSD-15348-G** Batch ID: **15348** Test Code: **TPHCGS** Units: **µg/g** Analysis Date **3/13/06 7:11:34 PM** Prep Date **3/13/06**
Client ID: Run ID: **ORGC8_060313A** SeqNo: **578540**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gas (C6-C14)	12.14	1.0	10.0	0	121%	102	128	12.1	0.548%	15	

Sample ID **LCS-06165** Batch ID: **R40310** Test Code: **TPHCGW** Units: **µg/L** Analysis Date **3/14/06 4:44:22 PM** Prep Date
Client ID: Run ID: **ORGC8_060314A** SeqNo: **579195**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gas (C6-C14)	534.7	50	500	0	107%	85	115	0			

Sample ID **LCSD-06165** Batch ID: **R40310** Test Code: **TPHCGW** Units: **µg/L** Analysis Date **3/15/06 6:26:12 AM** Prep Date
Client ID: Run ID: **ORGC8_060314A** SeqNo: **579213**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gas (C6-C14)	526.8	50	500	0	105%	85	115	535	1.48%	15	

Sample ID **LCS-15343** Batch ID: **15343** Test Code: **TPHDMS** Units: **µg/g** Analysis Date **3/13/06 11:43:18 AM** Prep Date **3/13/06**
Client ID: Run ID: **ORGC7_060313A** SeqNo: **578406**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	7.639	1.0	10.0	0	76.4%	70	130	0			
TPHC Motor Oil	19.21	10	20.0	0	96.0%	70	130	0			

Sample ID **LCSD-15343** Batch ID: **15343** Test Code: **TPHDMS** Units: **µg/g** Analysis Date **3/13/06 12:03:21 PM** Prep Date **3/13/06**
Client ID: Run ID: **ORGC7_060313A** SeqNo: **578407**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	7.985	1.0	10.0	0	79.8%	70	130	7.64	4.43%	15	
TPHC Motor Oil	19.68	10	20.0	0	98.4%	70	130	19.2	2.43%	15	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Pacific Lumber-M
Work Order: 0603278
Project: 089097.120, PALCO CO. GARAGE

QC SUMMARY REPORT
Laboratory Control Spike

Sample ID **LCS-15332** Batch ID: **15332** Test Code: **TPHDMW** Units: **µg/L** Analysis Date **3/10/06 11:43:45 AM** Prep Date **3/10/06**
Client ID: Run ID: **ORGC7_060310A** SeqNo: **577772**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	355.3	50	500	0	71.1%	72	124	0			S
TPHC Motor Oil	1,026	170	1,000	0	103%	71	139	0			

Sample ID **LCSD-15332** Batch ID: **15332** Test Code: **TPHDMW** Units: **µg/L** Analysis Date **3/10/06 12:03:59 PM** Prep Date **3/10/06**
Client ID: Run ID: **ORGC7_060310A** SeqNo: **577773**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	386.6	50	500	0	77.3%	72	124	355	8.44%	15	
TPHC Motor Oil	1,055	170	1,000	0	105%	71	139	1,030	2.76%	15	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

NORTH COAST LABORATORIES LTD.
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707-822-4649 Fax 707-822-6831

Chain of Custody

0603278

LABORATORY NUMBER:

Attention: Bob Host
Results & Invoice to: PALCO
Address: PO Box 37
Scotia, CA
Phone:
Copies of Report to: Roland Rucker - CHN
Sampler (Sign & Print):

TAT: ☐ 24 Hr ☐ 48 Hr ☒ 5 Day ☐ 5–7 Day
☐ STD (2–3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By:___/___/___
Final Report: FAX ☐ Verbal ☐ By:___/___/___

PROJECT INFORMATION
Project Number: 9097.120
Project Name: PALCO Co GAL-Ge
Purchase Order Number:

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	ANALYSIS: TPH-MO/D	ANALYSIS: TPHG, BTEX, MTBE, EDB
	B-502 @ 6.5'	2-9-06	950	S	NONE	4	X	X
	B-503 @ 7.5'		1025				X	X
	B-504 @ 5.5		1100				X	X
	B-505 @ 8'		1130				X	X
	B-506 @ 7.5'		1200				X	X
	B-507 @ 6.5		1300				X	X
	B-501 @ 5.5		820				X	X
	B-500 @ 5.5	V	745	V	V	V	X	X

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

SAMPLE CONDITION/SPECIAL INSTRUCTIONS

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
	2/9/06		1635

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

NORTH COAST LABORATORIES LTD.
5680 West End Road · Arcata · CA 95521-9202
707-822-4649 Fax 707-822-6831

Chain of Custody

0603278

LABORATORY NUMBER:

Attention: Eric Vogt
Results & Invoice to:
Address: PO Box 37
Scotia, CA
Phone:
Copies of Report to: Roland Rueber - SHN

Sampler (Sign & Print): [signature]

PROJECT INFORMATION
Project Number: 089097.100
Project Name: Elco Co Garage
Purchase Order Number:

TAT: ☐ 24 Hr ☐ 48 Hr ☒ 5 Day ☐ 5–7 Day
☐ STD (2–3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By: __/__/__
Final Report: FAX ☐ Verbal ☐ By: __/__/__

CONTAINER CODES: 1—1/2 gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

	PRESERVATIVE		HCL
	CONTAINER	60 ML VOA	40 ML VOA
	ANALYSIS	TPHMO/D	TPHG/BTEX MTBE 8021B

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*				
	B-507	3-9-06	1330	GW	5	X	X	X
	B-506	↓	1230	↓	5	X	X	X
	B-504	↓	1445	↓	5	X	X	X
	B-505	↓	1450	↓	5	X	X	X
	B-502	↓	1435	↓	5	X	X	X
	B-501	↓	1425	↓	5	X	X	X
	B-503	↓	1440	↓	5	X	X	X
	B-500	↓	1420	↓	5	X	X	X

SAMPLE CONDITION/SPECIAL INSTRUCTIONS

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
[signature] 3/9/06		[signature]	16:25

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

CONSULTING ENGINEERS & GEOLOGISTS, INC.
812 W. Wabash Eureka, CA 95501-2138 Tel: 707/441-8855 FAX: 707/441-8877 E-mail: shninfo@shn-engr.com

MATERIALS TESTING LABORATORY
RECEIVING AND SCHEDULING OF TESTS

JOB # 089097.120

JOB NAME PALCO CO. GARAGE DATE COLLECTED 3-9-06

RETURN RESULTS TO Roland Ruetsen DATE COMPLETED 3-31-06 DATE RECORDED 3-21-06

TOTAL NUMBER OF SAMPLES BAGS ____ BUCKETS ____ SHELBY TUBES ____ BRASS LINERS ____

SAMPLE CONDITION: INTACT [X] DAMAGED [ ] COMPOSITE [ ] UNDISTURBED [X] 4 PLASTIC TUBES

NEED
% SAND
% SILT
% CLAY

SAMPLE NO. & DEPTH	MOISTURE DENSITY	UNCONFINED COMPRESSION	USDA TEXTURAL ANALYSIS	COARSE SIEVE ANALYSIS 3" to No.4	FINE SIEVE ANALYSIS No.4 to No. 200	% PASSING 200	SAND EQUIVALENT	SPECIFIC GRAVITY	PLASTICITY INDEX	COMPACTION CURVE (ASTM-1557)	CAL TRANS CURVE (CT-216)	COMPACTION CHECK POINT	% ORGANICS	LA RATTLER	DURABILITY	SULFATE SOUNDNESS	RICE SPECIFIC GRAVITY	R VALUE	CONSOLIDATION * D4220	DIRECT SHEAR **		LAB SAMP. #
B-500 @ 11.5'																			X			6-184
B-502 @ 11.5																			X			6-185
B-503 @ 11.5																			X			6-186
B-504 @ 8.5'																			X			6-186
TOTAL																						

COMMENTS:

* Indicate The Following: Consolidation Loads: _____ Note all points to be saturated

** Indicate The Following: Confining loads: _____ Consolidated Drained: [ ] Consolidated Undrained: [ ] Unconsolidated Undrained: [ ] Indicate no. of Residual Cycles _____

Revised 5/03

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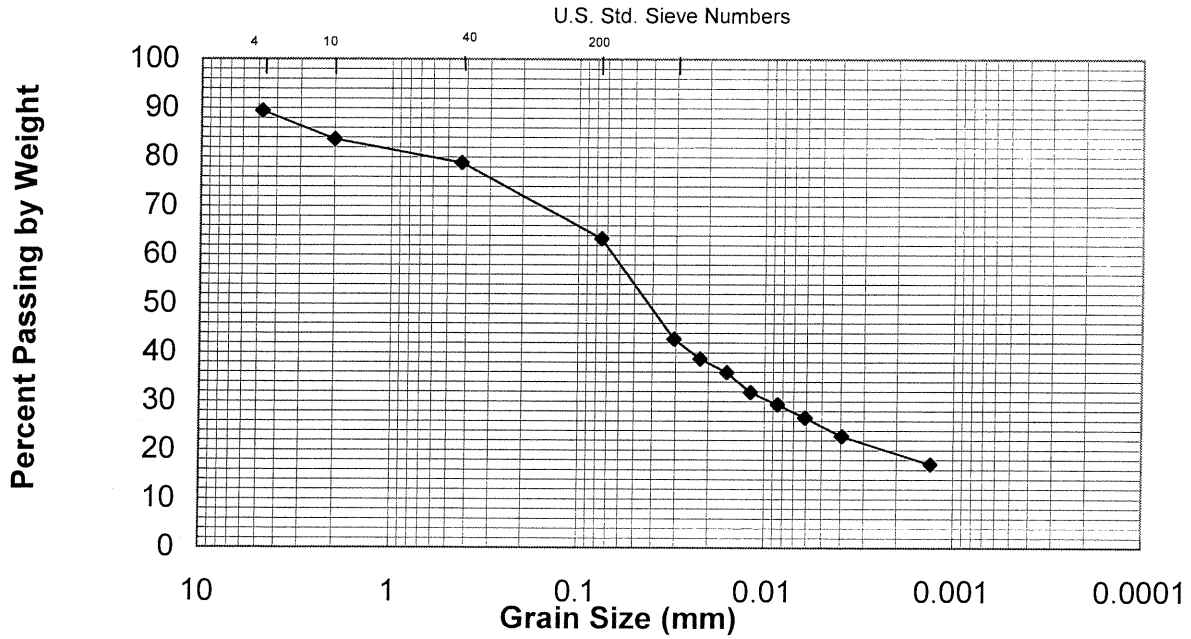
PROJECT NAME:	Palco Garage	PROJECT NUMBER:	089097.120
SAMPLE ID:	B-500@ 11.5	LAB SAMPLE #:	6-184

SIEVE	#4	#10	#40	#200								
SIEVE SIZE (mm)	4.75	2.00	0.425	0.075	0.0306	0.0222	0.0159	0.0119	0.0085	0.0061	0.0039	0.0013
PERCENT PASSING	89.4	83.6	78.8	63.3	42.7	38.6	35.9	31.8	29.4	26.6	22.8	17.1

Gradation Test Results



GVL	SAND			SILT or CLAY
Fine	Coarse	Medium	Fine	

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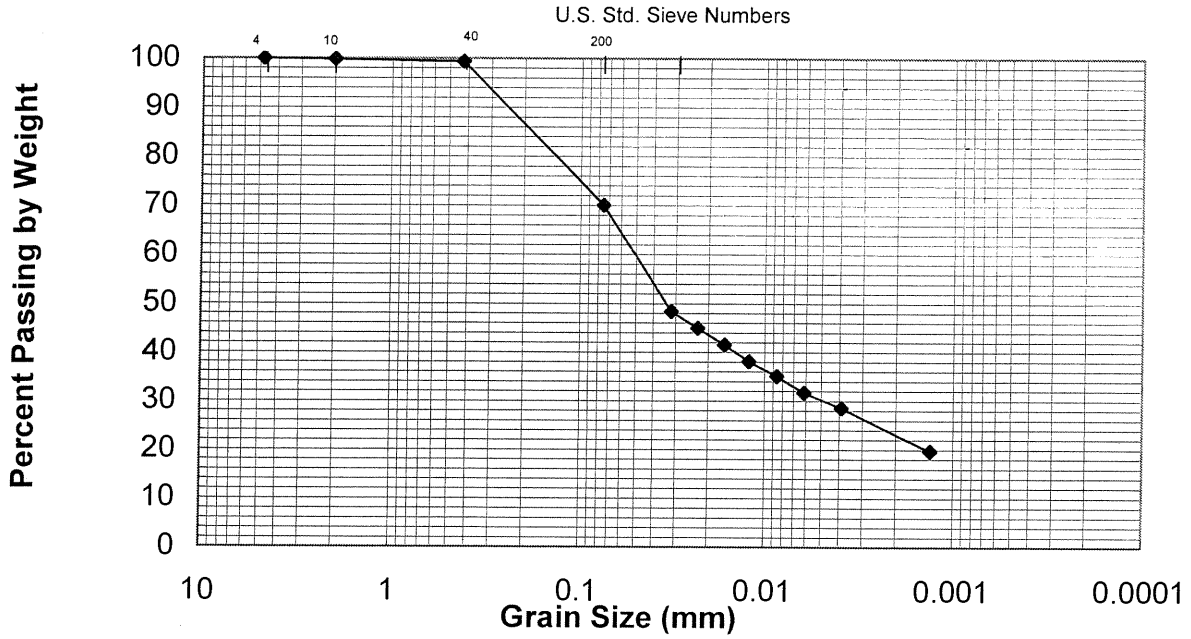
PROJECT NAME:	Palco Garage	PROJECT NUMBER:	089097.120
SAMPLE ID:	B-502 @ 11.5	LAB SAMPLE #:	6-185

SIEVE	#4	#10	#40	#200								
SIEVE SIZE (mm)	4.75	2.00	0.425	0.075	0.0318	0.0228	0.0164	0.0121	0.0086	0.0062	0.0039	0.0013
PERCENT PASSING	100.0	99.8	99.3	70.0	48.3	44.9	41.5	38.1	35.0	31.6	28.5	19.6

Gradation Test Results



GVL	SAND			SILT or CLAY
Fine	Coarse	Medium	Fine	

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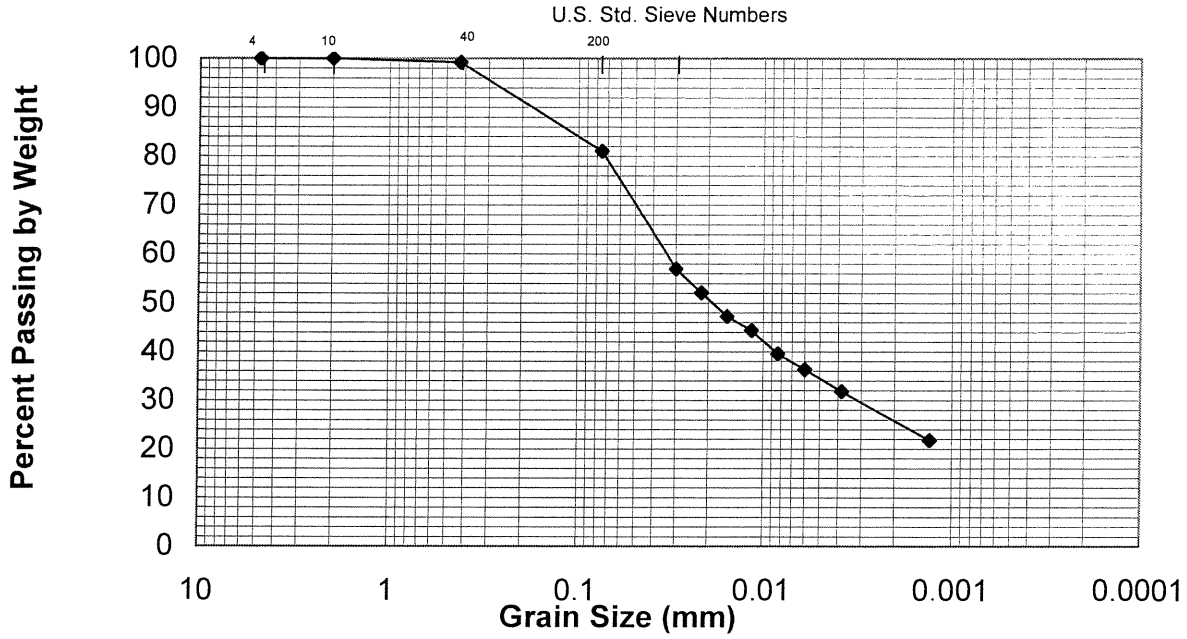
PROJECT NAME:	Palco Garage	PROJECT NUMBER:	089097.120
SAMPLE ID:	B-503 @ 11.5	LAB SAMPLE #:	6-186

SIEVE	#4	#10	#40	#200								
SIEVE SIZE (mm)	4.75	2.00	0.425	0.075	0.0300	0.0217	0.0158	0.0115	0.0083	0.0060	0.0038	0.0013
PERCENT PASSING	100.0	100.0	99.2	81.0	56.9	52.1	47.2	44.3	39.5	36.3	31.8	21.8

Gradation Test Results



GVL	SAND			SILT or CLAY
Fine	Coarse	Medium	Fine	

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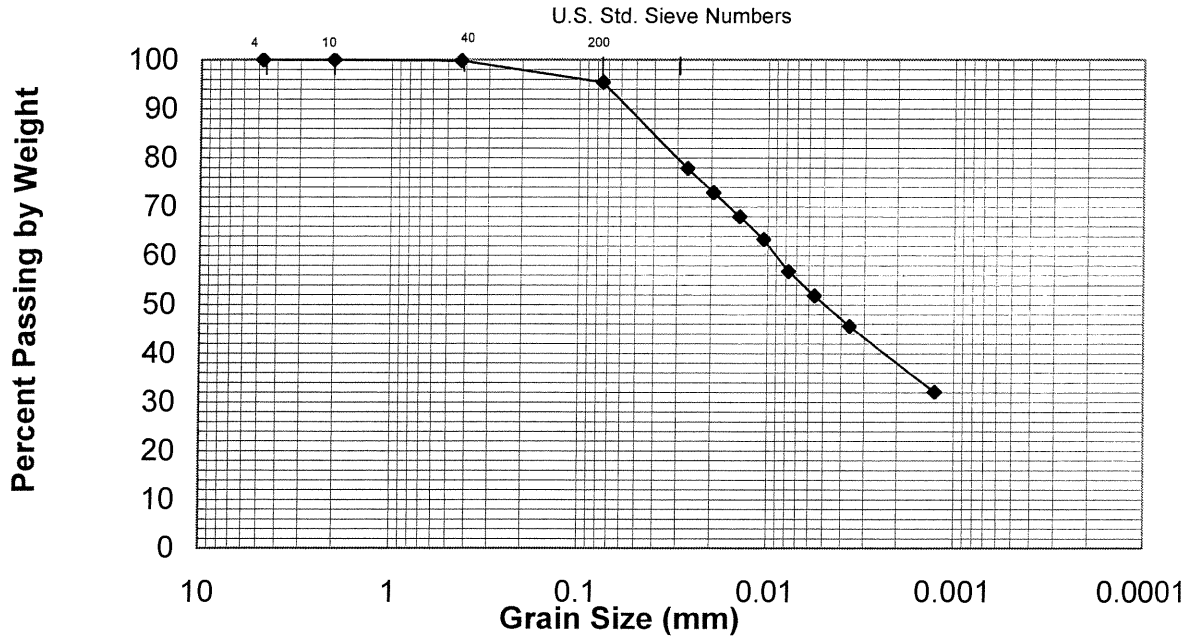
PROJECT NAME:	Palco Garage	PROJECT NUMBER:	089097.120
SAMPLE ID:	B-504 @ 8.5	LAB SAMPLE #:	6-187

SIEVE	#4	#10	#40	#200								
SIEVE SIZE (mm)	4.75	2.00	0.425	0.075	0.0267	0.0195	0.0142	0.0105	0.0077	0.0056	0.0036	0.0013
PERCENT PASSING	100.0	100.0	99.8	95.4	77.8	72.9	68.0	63.3	56.8	51.8	45.6	32.1

Gradation Test Results



GVL	SAND			SILT or CLAY
Fine	Coarse	Medium	Fine	